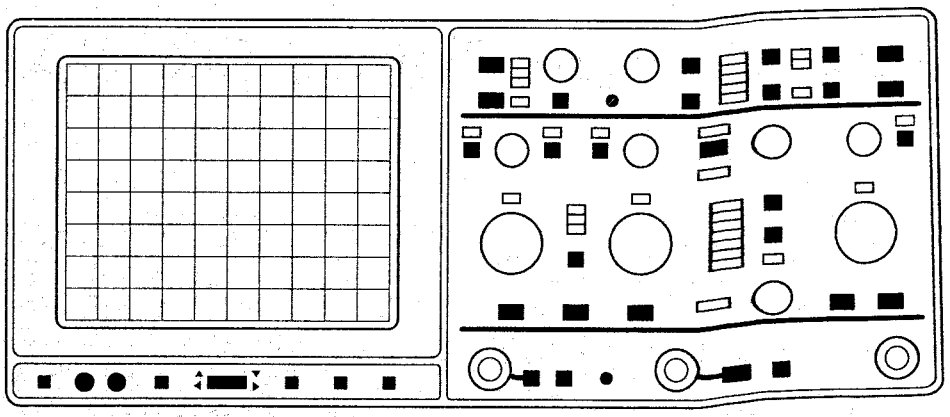
HAMEG®
Instruments

MANUAL



AC Board
Diagram 2
Top and bottom side 3

AT Board
Diagram 4
Top and bottom side 5

RA Board
Diagram 6
Top and bottom side 7

RB Board
Diagram 8
Top and bottom side 9

TG Board
Diagram 10-11
Top and bottom side 12

Digital Board
Diagram 13-18
Top side 19
Bottom side 20

FC Board
Diagram 21-22
Top side 23
Bottom side 24

XY Board
Diagram 25-26
Top side 27
Bottom side 28

ZF Board
Diagram 29-30
Top side 31
Bottom side 32

CRT Board
Diagram 33
Top and bottom side 34

PS Board
Diagram 35
Top side 36
Bottom side 37

PSP and PSS Board
Top side 38

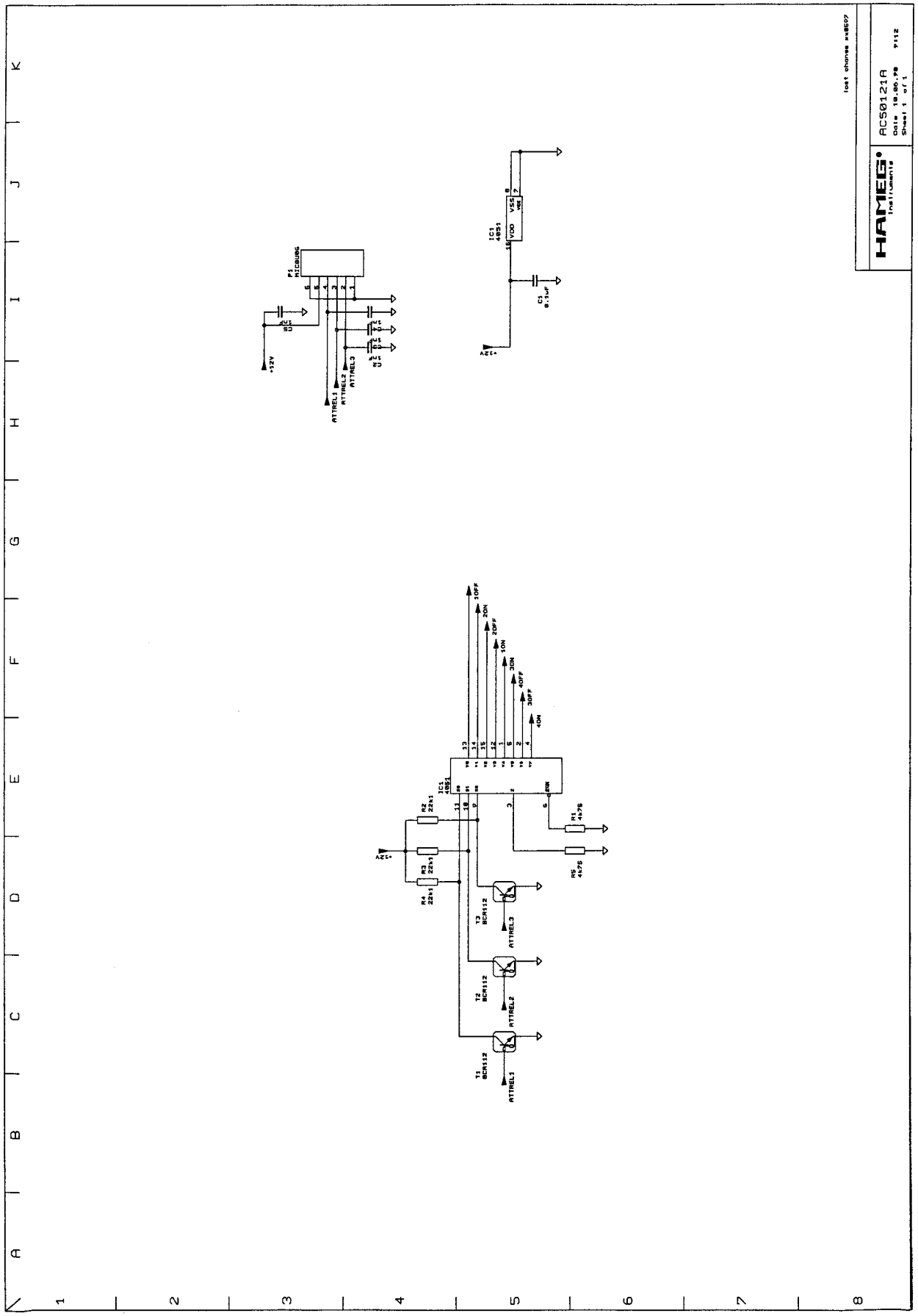
PA Board
Diagram 39
Top and bottom side 40

Service Manual
Circuit Diagrams

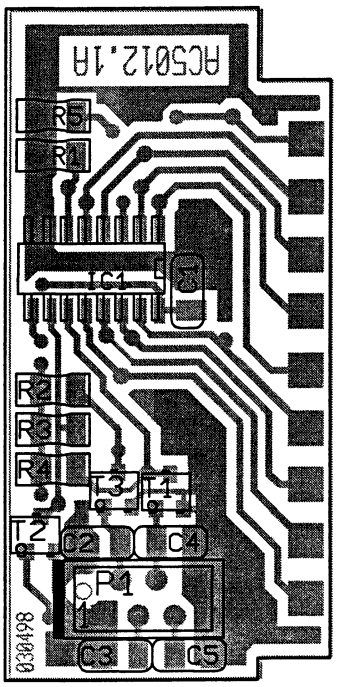
HM5012/14

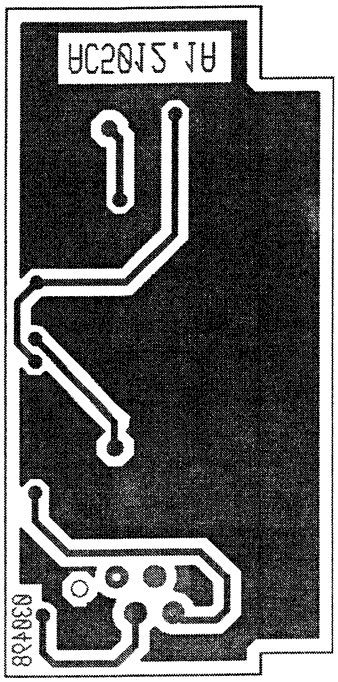
St. 030998. fell/goRR

AC Board - Diagram

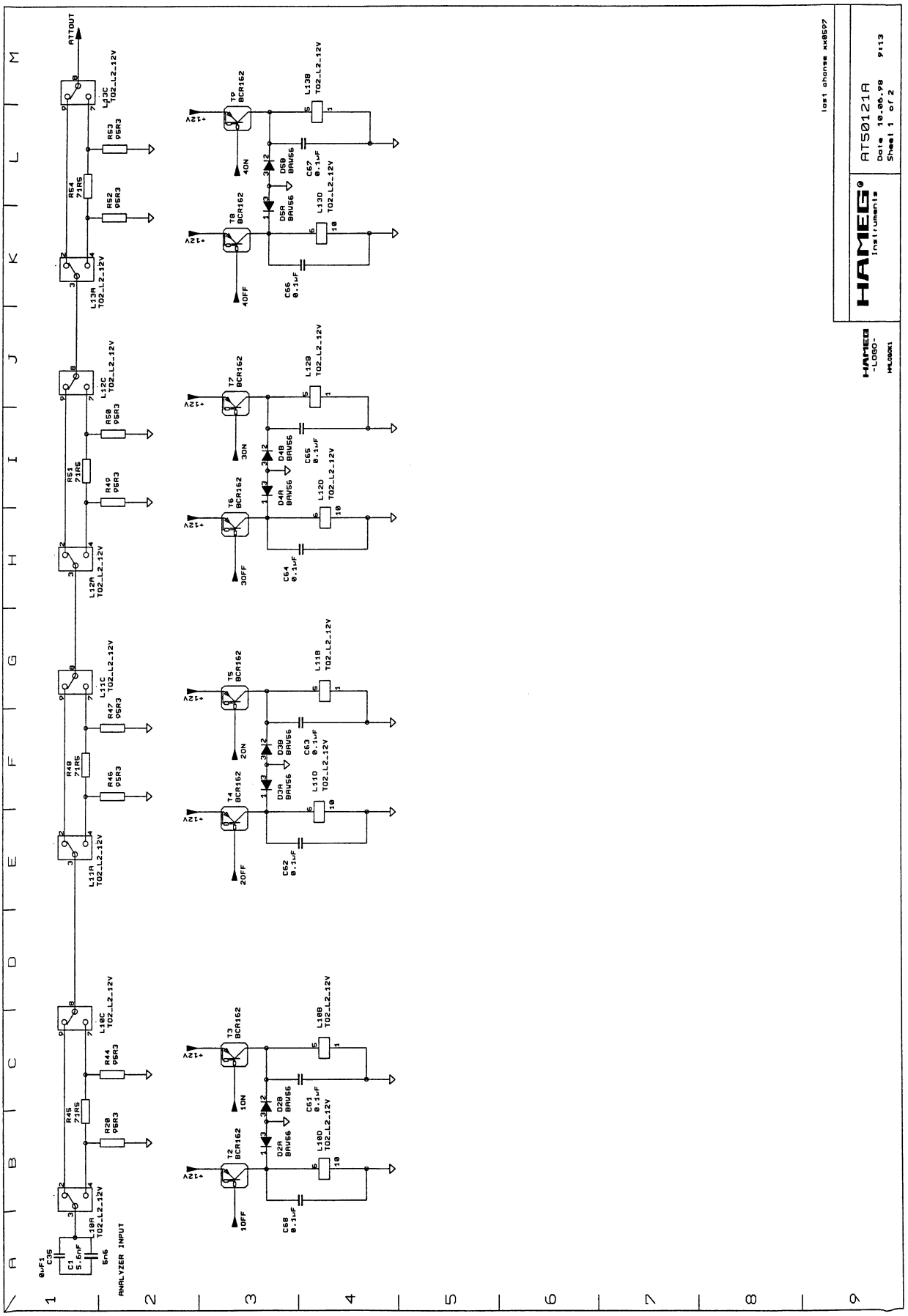


Subject to change without notice

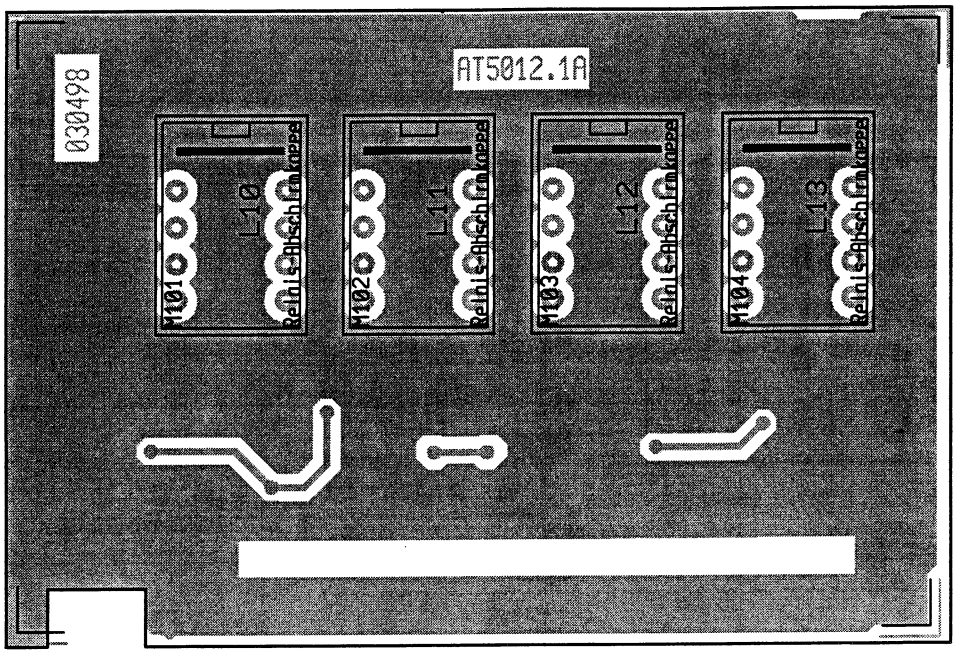

AC5012.1A
R5
R4
IC1
R2
R3
R4
T3
T1
T2
C2
C4
R1
C3
C5
030498

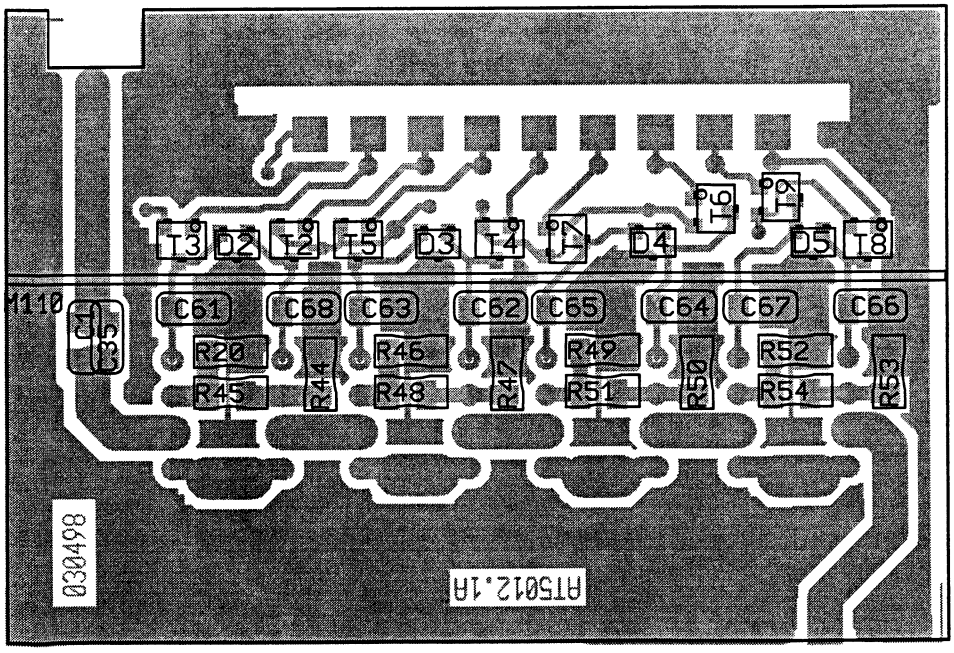

AC5012.1A
030498

AT Board - Diagram

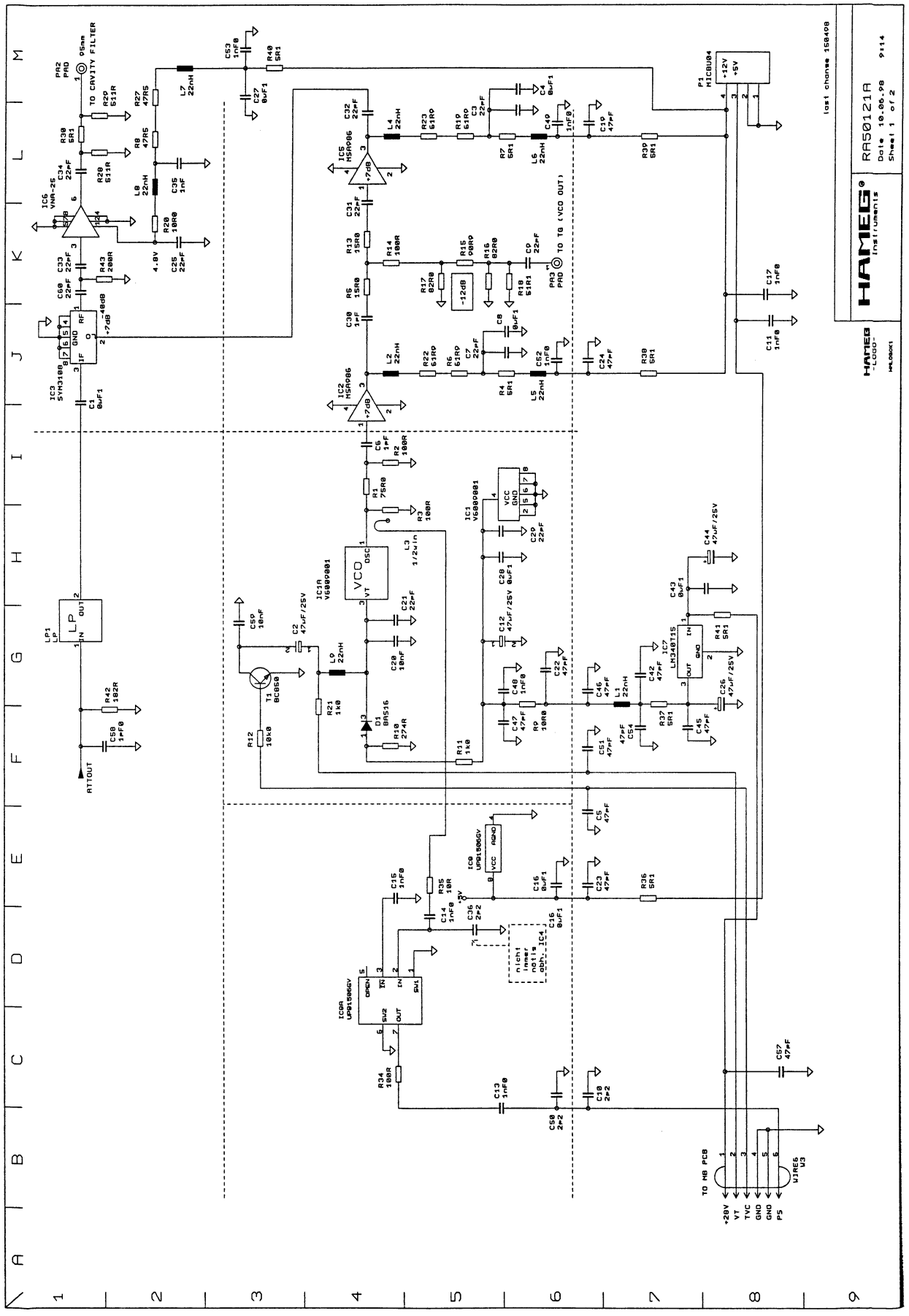


Subject to change without notice

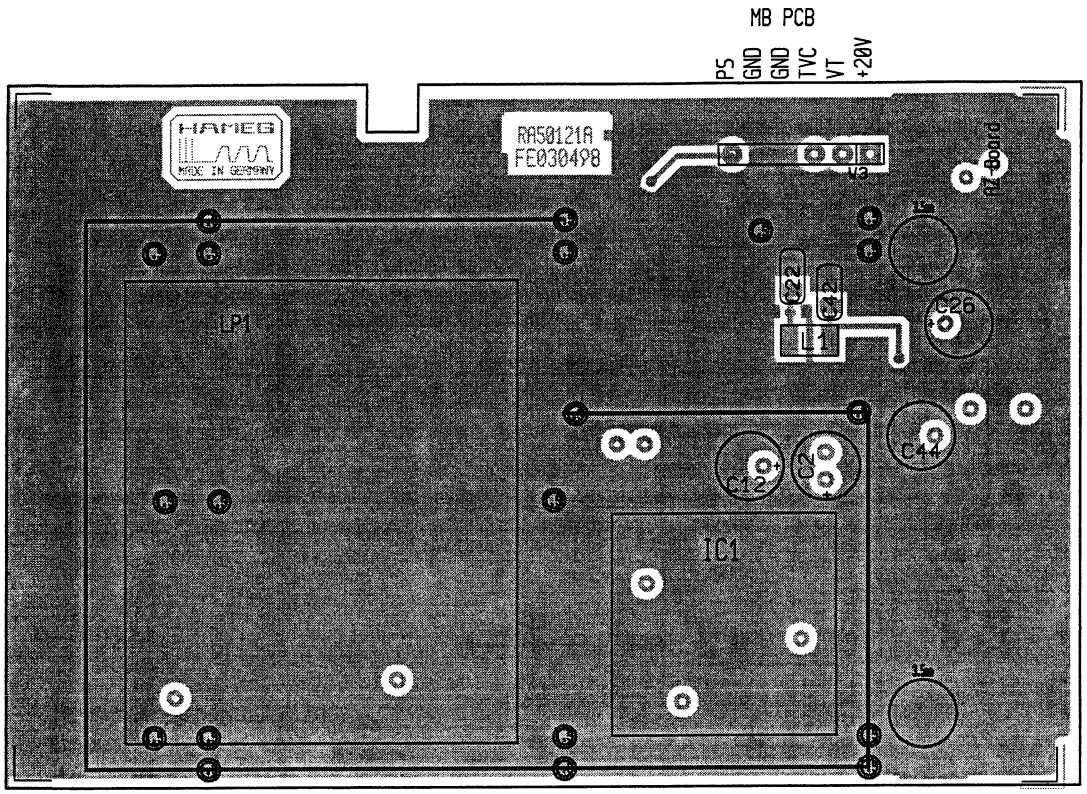

AT5012.1A
030498
L10
L11
L12
L13

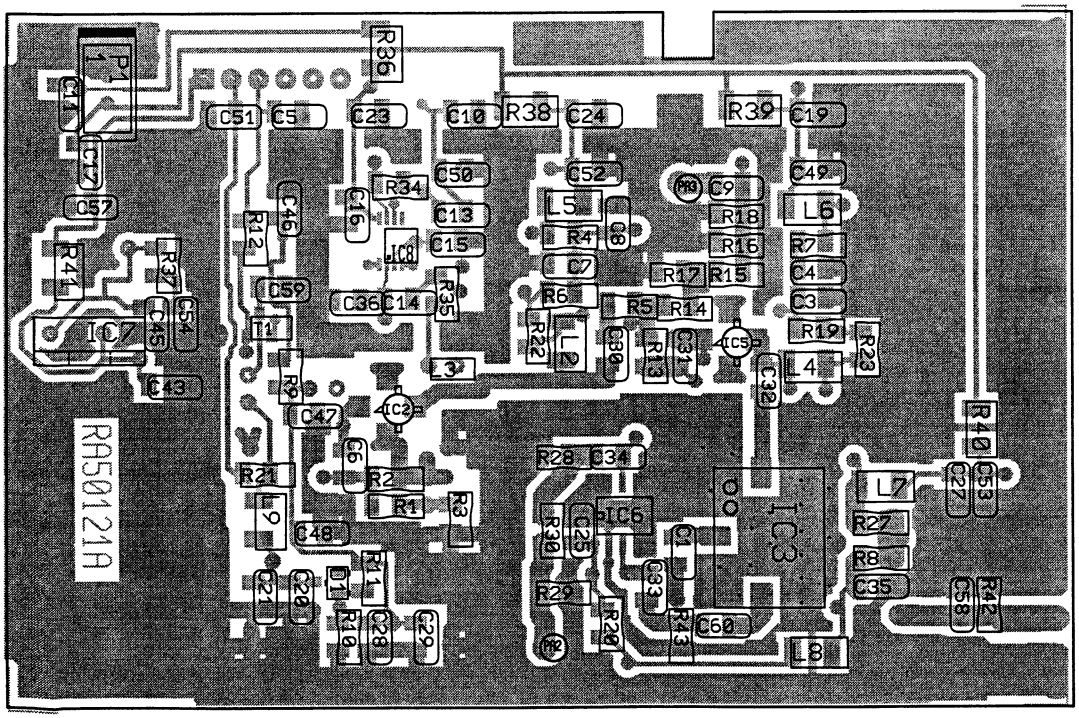

T3
D2
T2
T5
D3
T4
T7
D4
T6
T9
D5
T8
C61
C68
C63
C62
C65
C64
C67
C66
C34
C35
R20
R45
R41
R46
R48
R47
R49
R51
R50
R52
R54
R53
030498
AT5012.1A

RA Board - Diagram

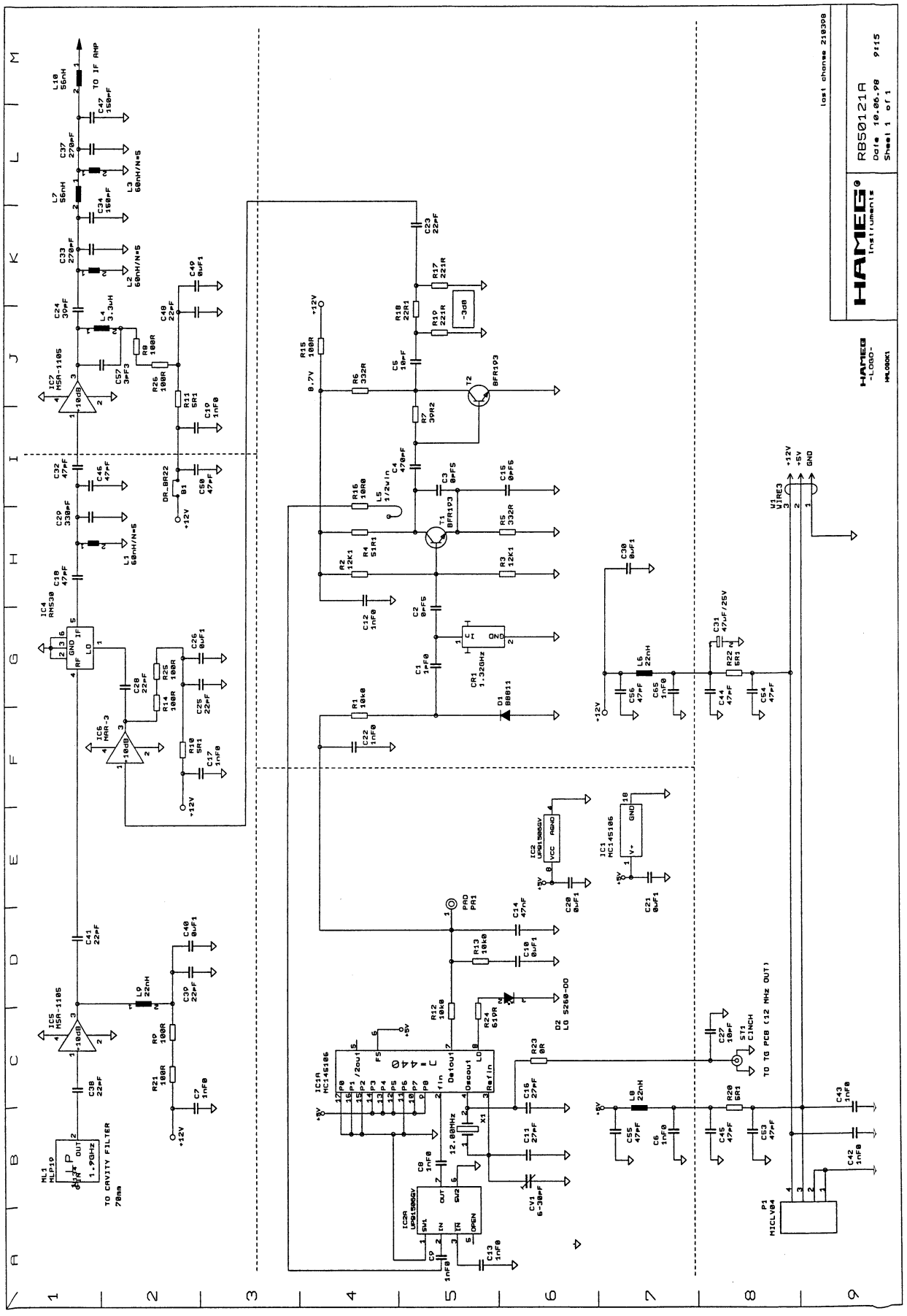


Subject to change without notice


MB PCB
P5
GND
GND
TVC
VT
+20V
HAMEG
MADE IN GERMANY
RA50121A
FE030498
RA-Board
LP1
L1
C26
C44
C12
IC1


RA50121A
IC7
IC2
IC5
IC6
IC3
IC8

RB Board - Diagram



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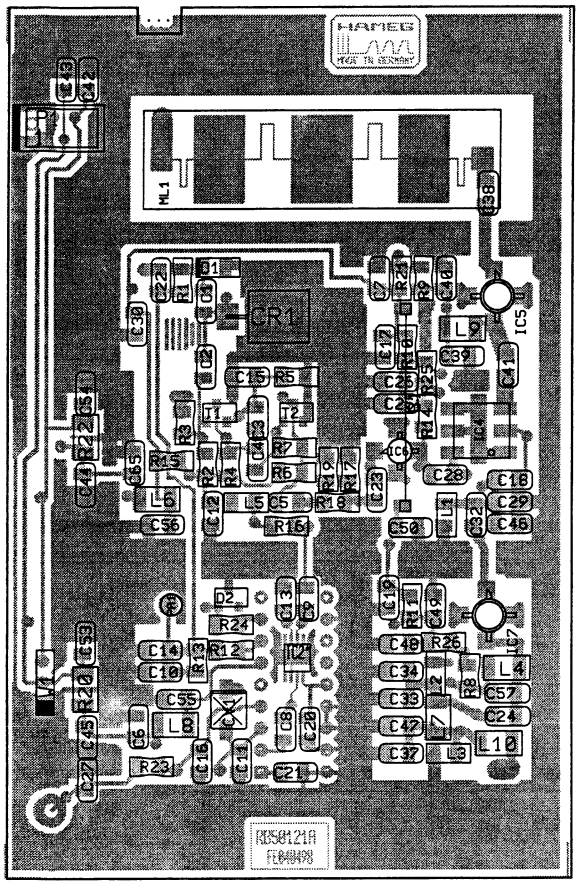
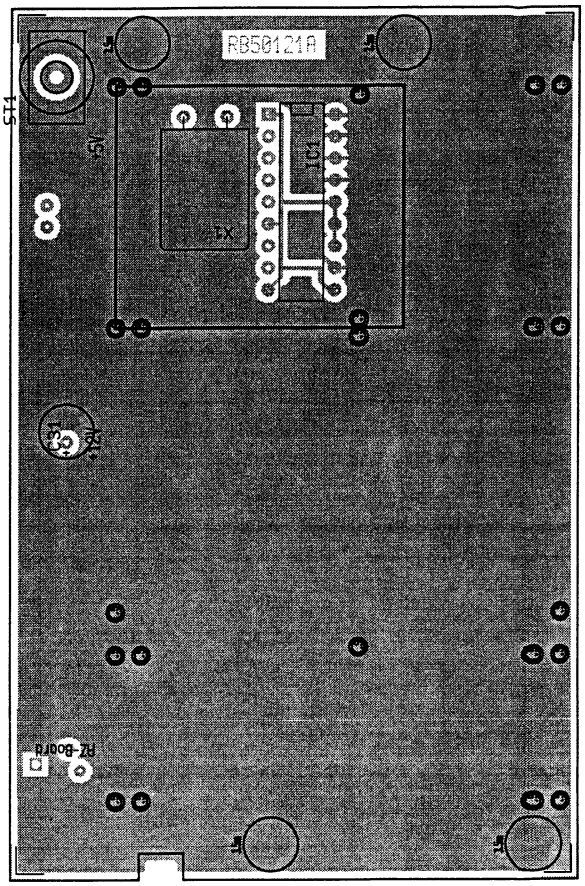
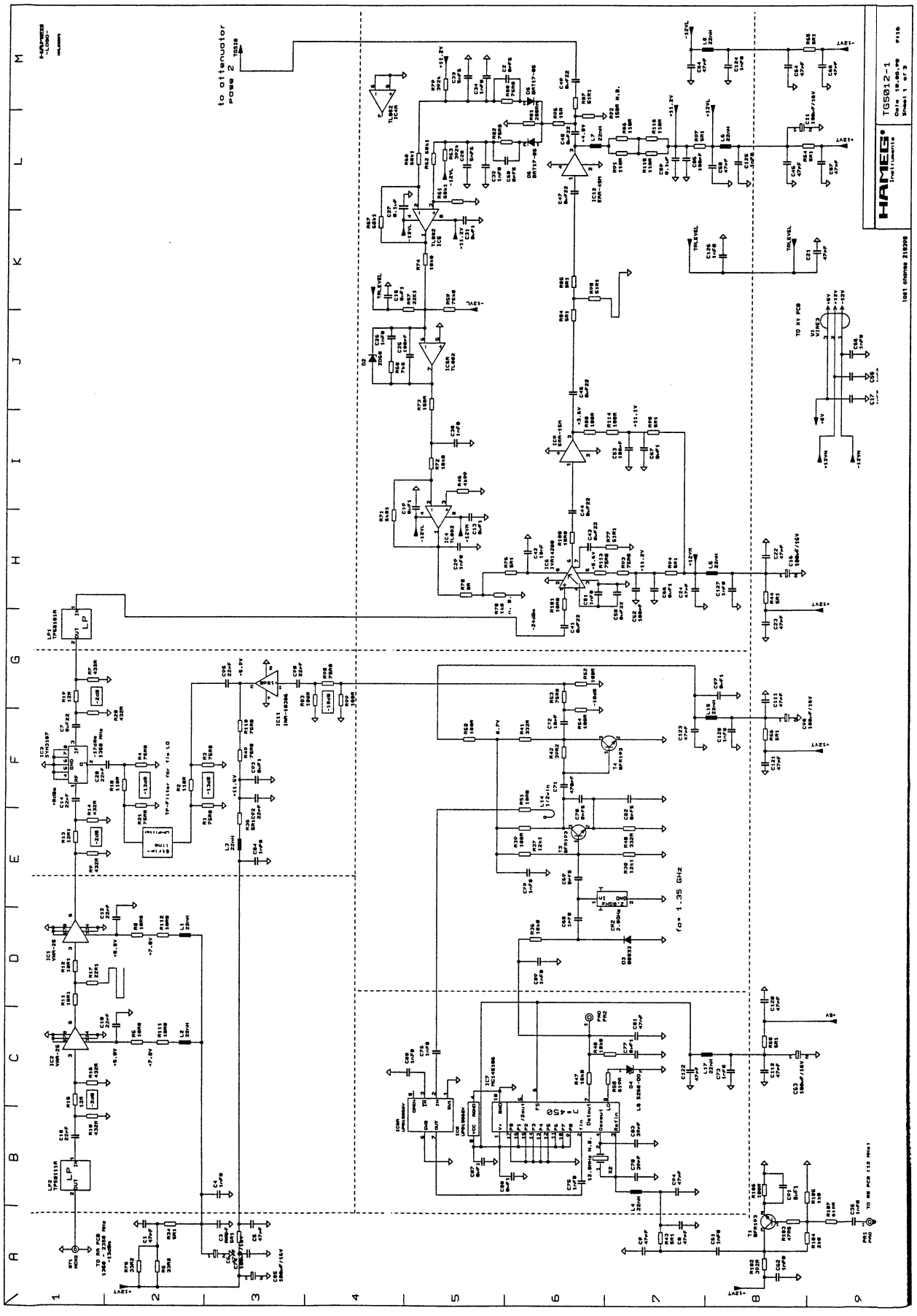
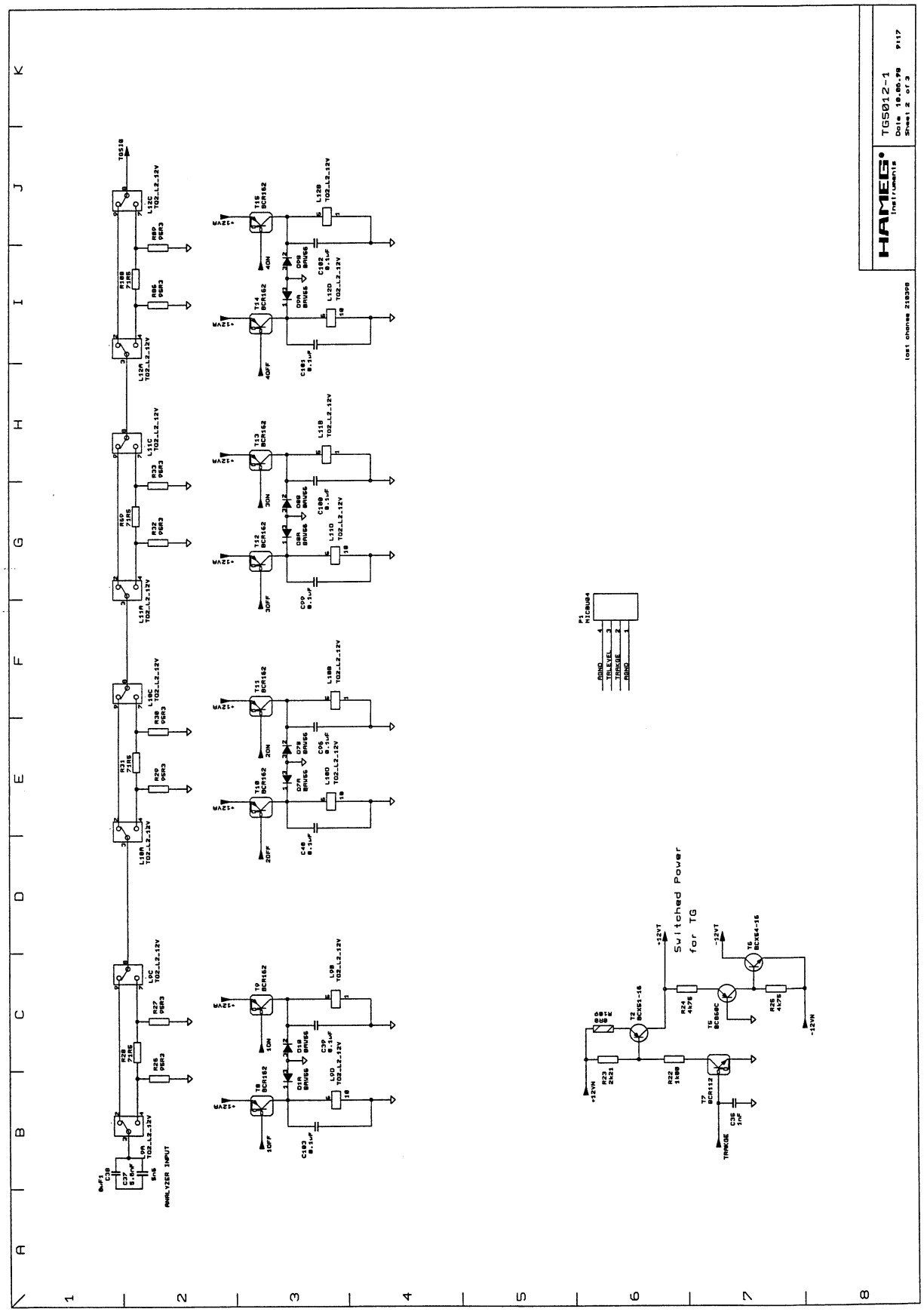

HAMEG
MADE IN GERMANY
HL1
CR1
IC5
RB50121A


RB50121A
ST1
IC1
X1
RZ-board

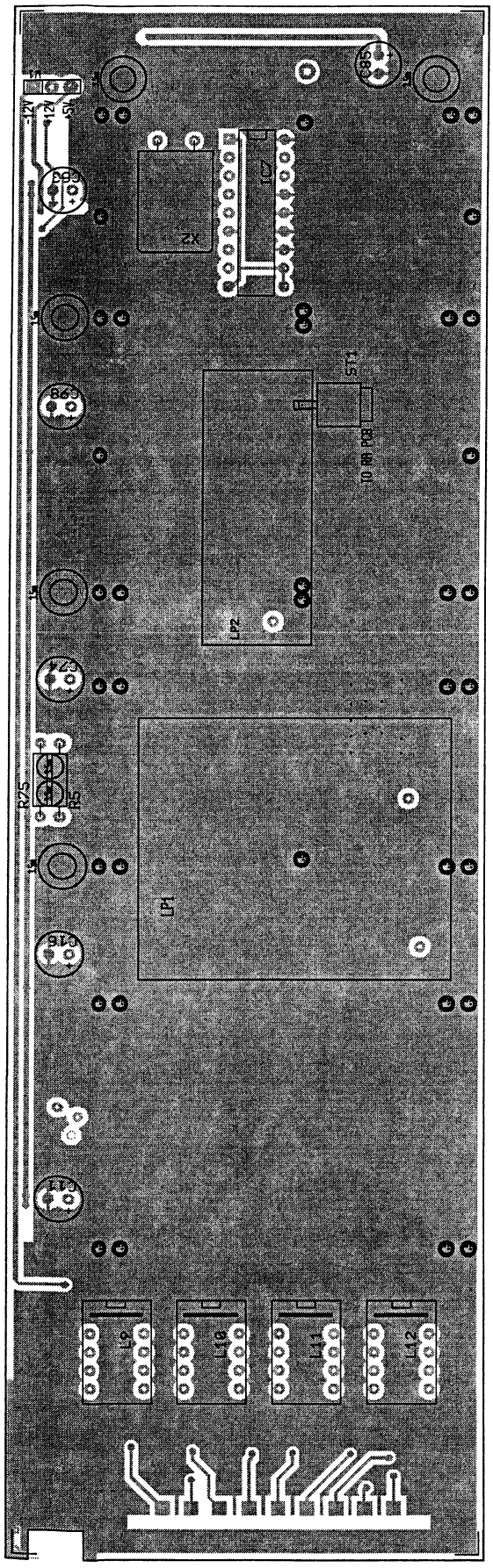
TG Board - Diagram

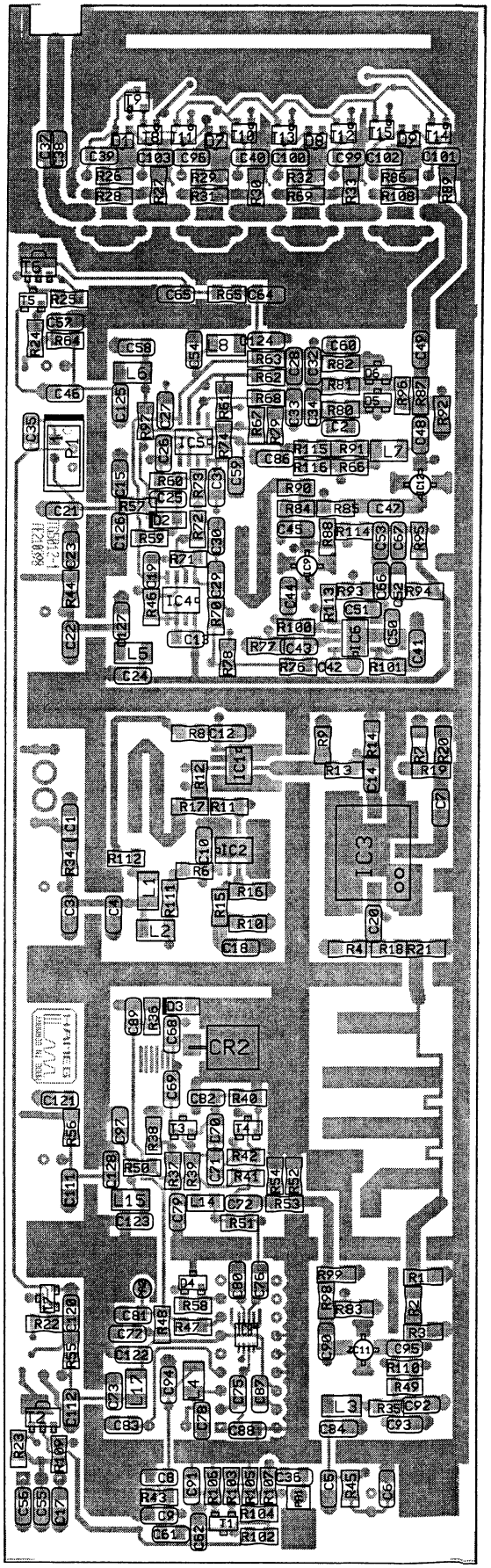


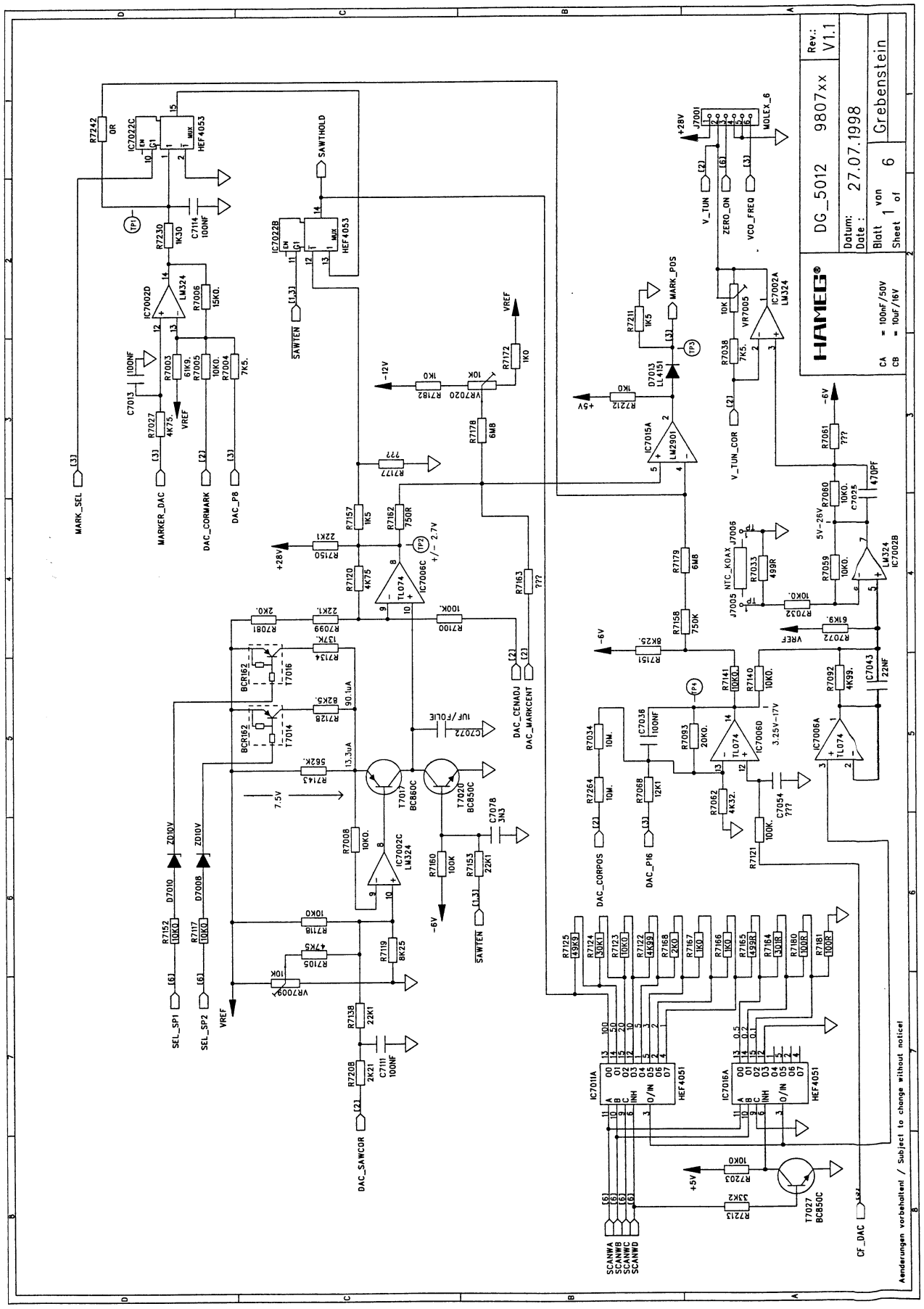
Subject to change without notice


HAMEG
TG5012-1
Switched Power
for TG

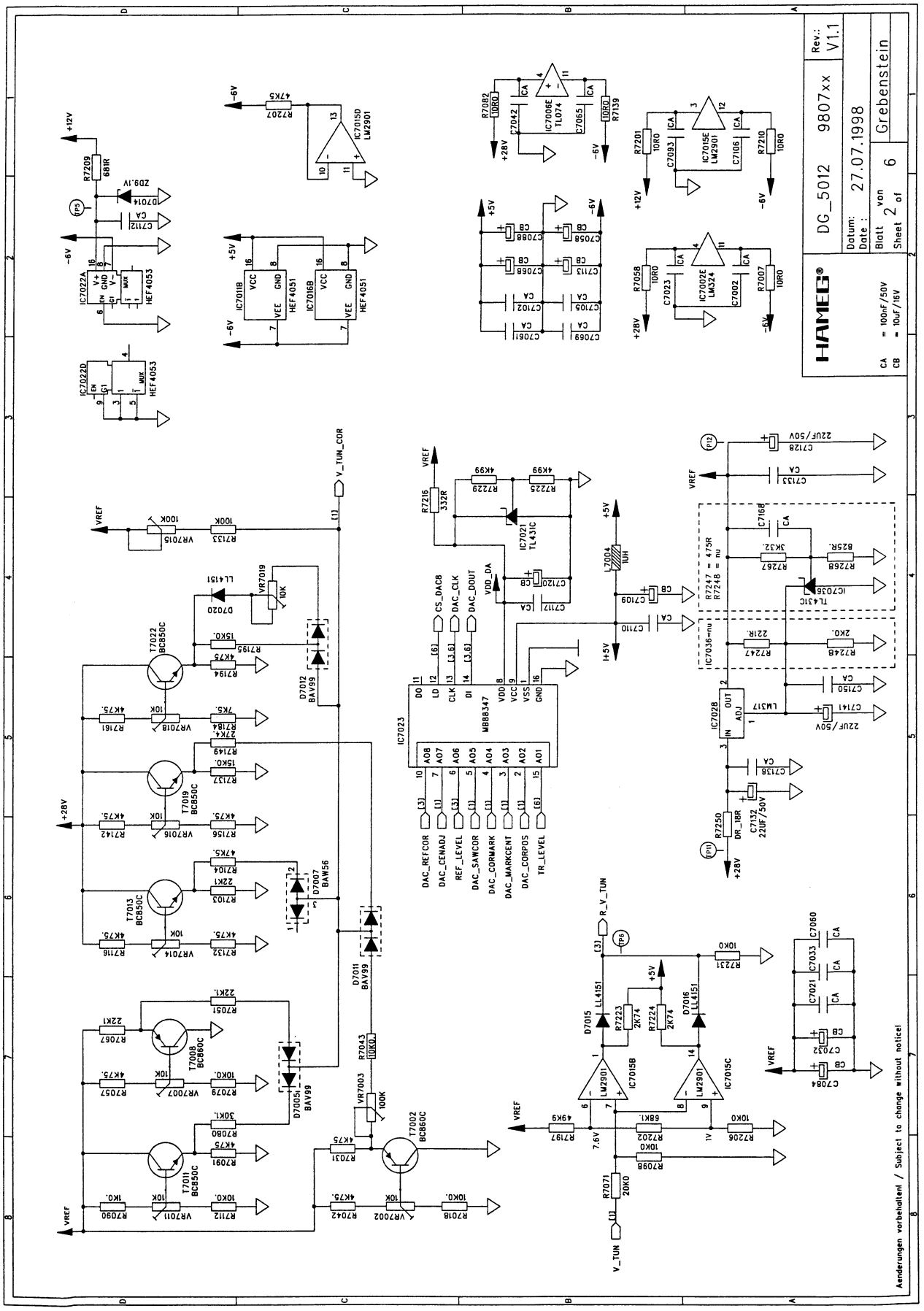
TG Board - Top and bottom side

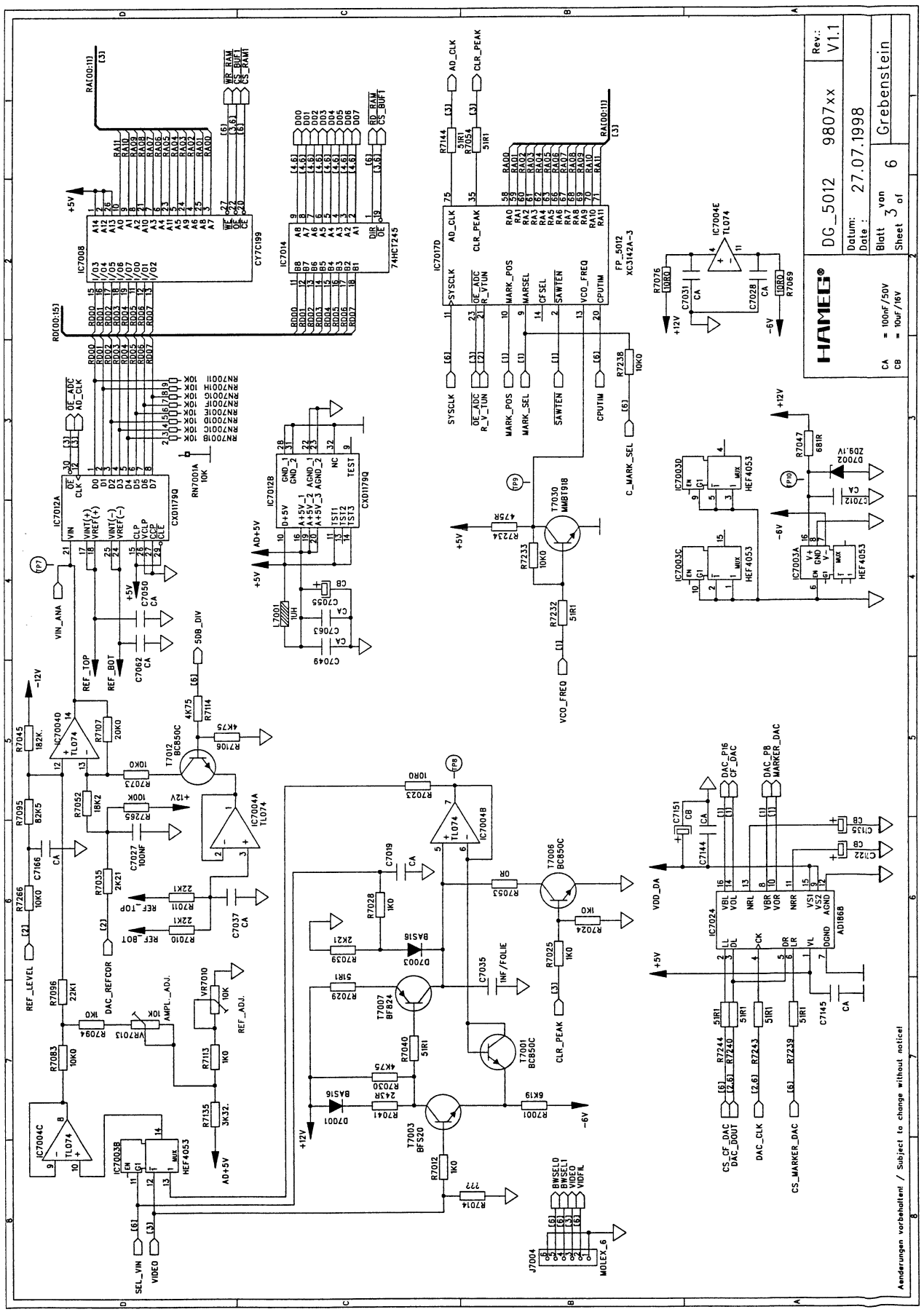




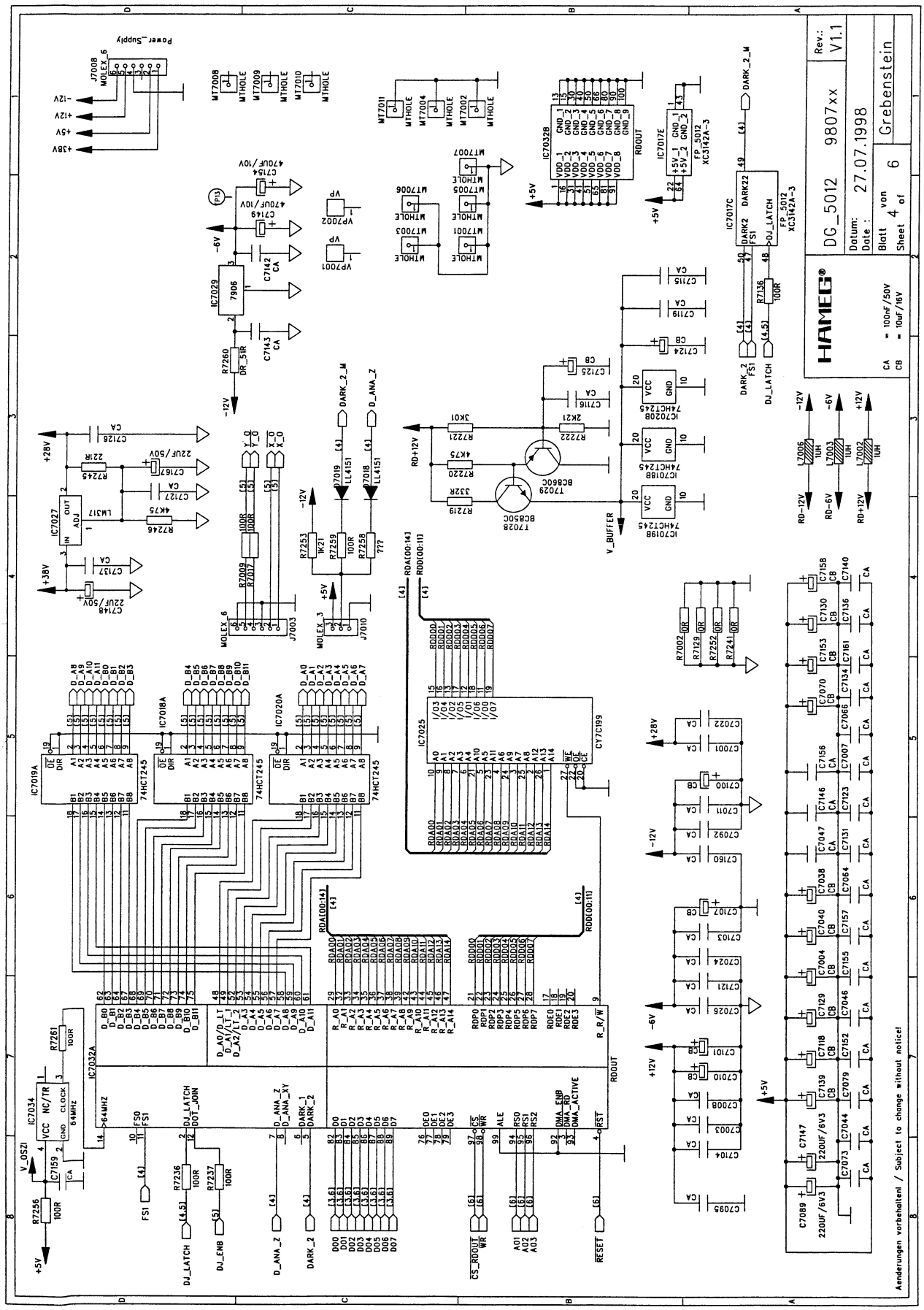

DG_5012 9807xx
Rev.: V1.1
Datum: 27.07.1998
Date :
Blatt 1 von 6
Sheet 1 of 6
Grebenstein
HAMEG
CA = 100nF/50V
CB = 10uF/16V
Aenderungen vorbehalten! / Subject to change without notice!
MARK_SEL
MARKER_DAC
DAC_CORMARK
DAC_P8
SAWTHOLD
SAWTEN
VREF
MARK_POS
V_TUN
ZERO_ON
VCO_FREQ
V_TUN_COR
DAC_CENADJ
DAC_MARKCENT
DAC_CORPOS
DAC_P16
DAC_SAWCOR
SEL_SP1
SEL_SP2
SCANWA
SCANWB
SCANWC
SCANWD
CF_DAC
IC7022C HEF4053
IC7022B HEF4053
IC7002D LM324
IC7002C LM324
IC7002A LM324
IC7002B LM324
IC7006C TL074
IC7006D TL074
IC7006A TL074
IC7015A LM2901
IC7011A HEF4051
IC7016A HEF4051
T7017 BC860C
T7020 BC850C
T7027 BC850C
D7010 ZD10V
D7008 ZD10V
D7013 LL4151
J7001 MOLEX_6
J7005 NTC_KOAX
+28V
+5V
-6V
-12V
+/- 2.7V
7.5V
3.25V-17V
5V-26V
90.1uA
13.3uA

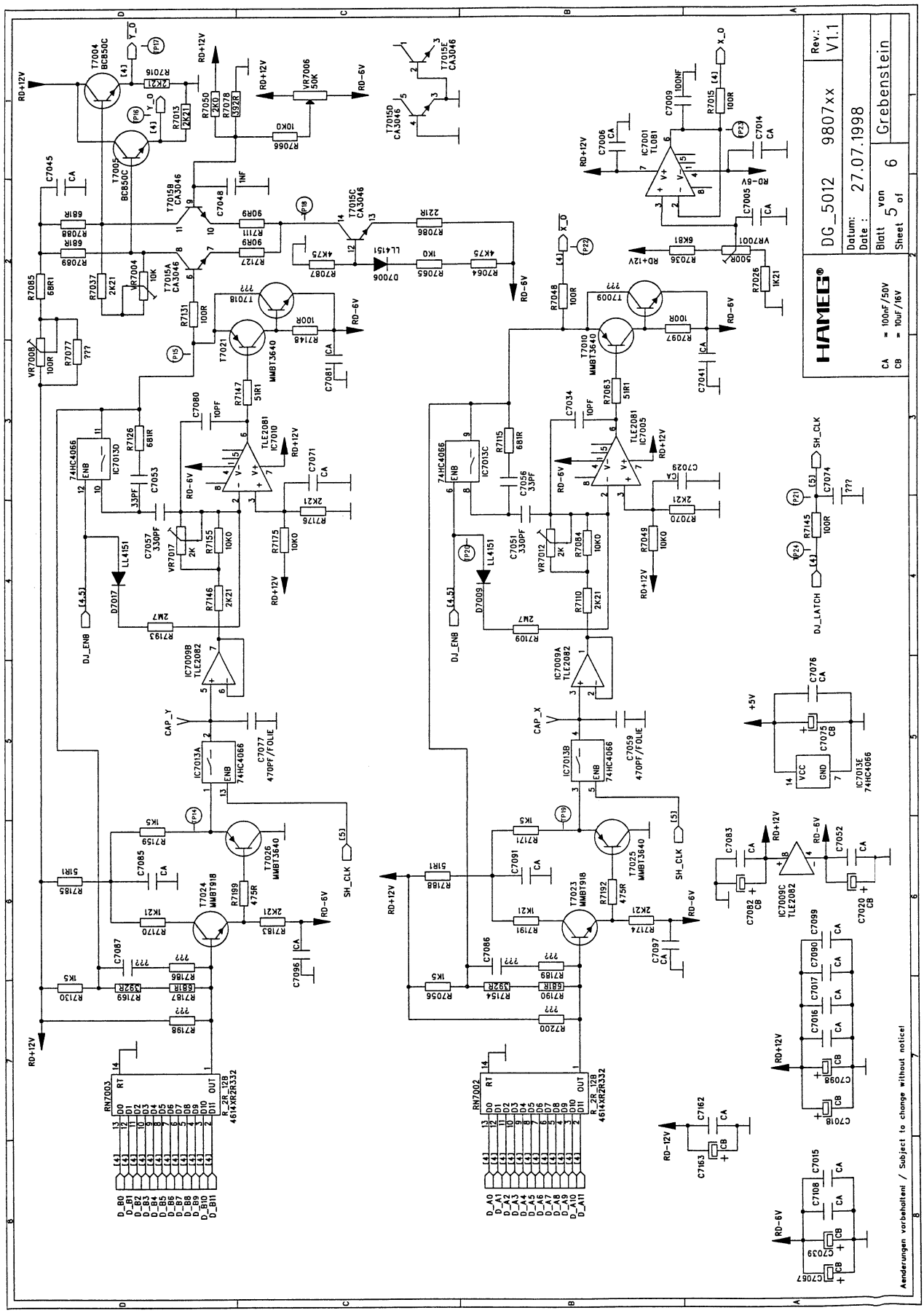
Digital Board - Diagram

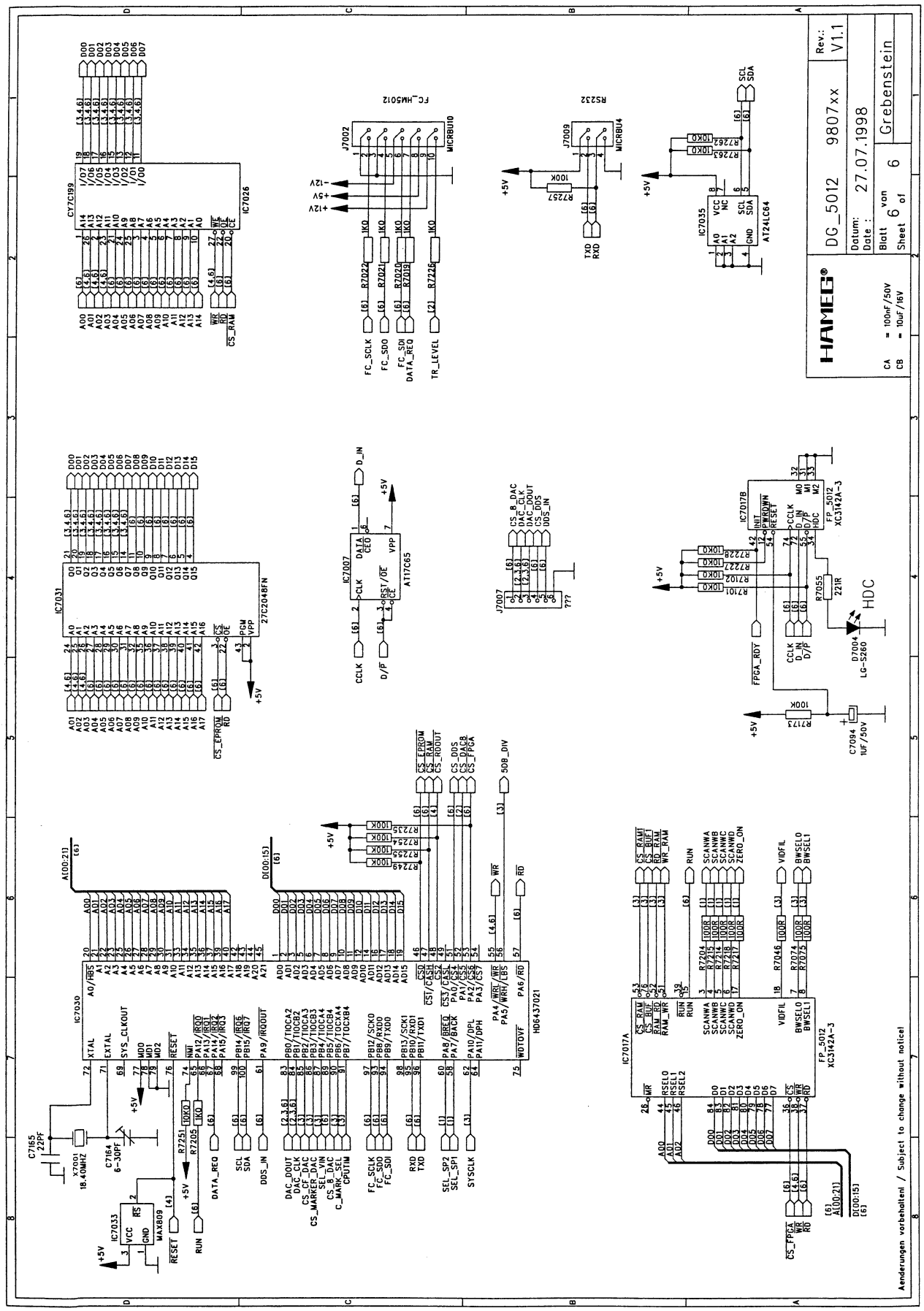



HAMEG
DG_5012 9807xx V1.1
Datum: 27.07.1998
Date : Grebenstein
Blatt 3 von 6
Sheet of
CA = 100nF/50V
CB = 10uF/16V
Aenderungen vorbehalten! / Subject to change without notice!

Digital Board - Diagram




HAMEG
DG_5012 9807xx
Rev.: V1.1
Datum: 27.07.1998
Date :
Blatt 5 von 6
Sheet 5 of 6
Grebenstein
CA = 100nF/50V
CB = 10uF/16V
Änderungen vorbehalten! / Subject to change without notice!
RD+12V
RD-6V
RD+5V
RD-5V
RD+12V
CAP_X
CAP_Y
DJ_ENB
DJ_LATCH
SH_CLK
X_O
Y_O
D_B0
D_B1
D_B2
D_B3
D_B4
D_B5
D_B6
D_B7
D_B8
D_B9
D_B10
D_B11
D_A0
D_A1
D_A2
D_A3
D_A4
D_A5
D_A6
D_A7
D_A8
D_A9
D_A10
D_A11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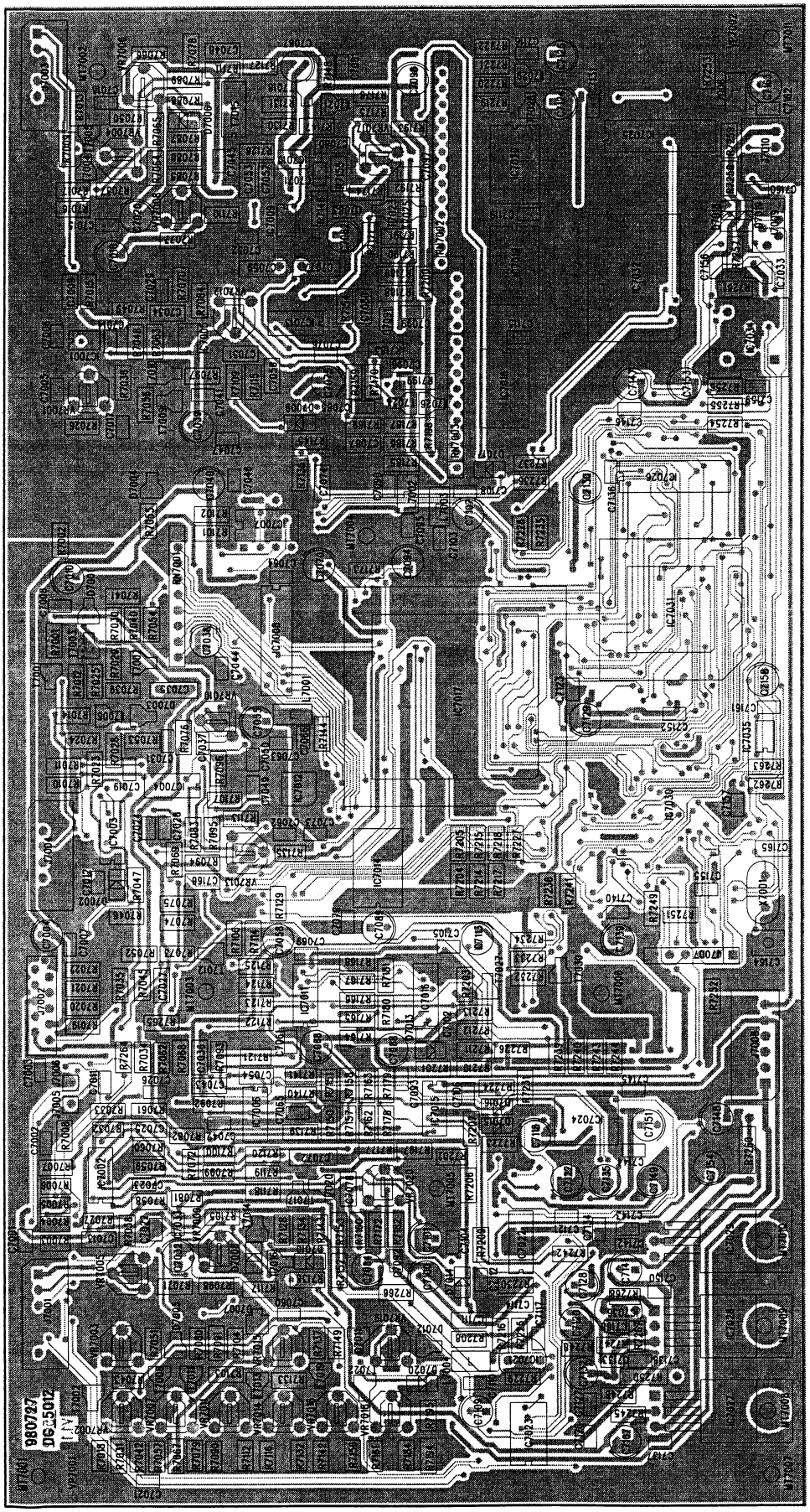
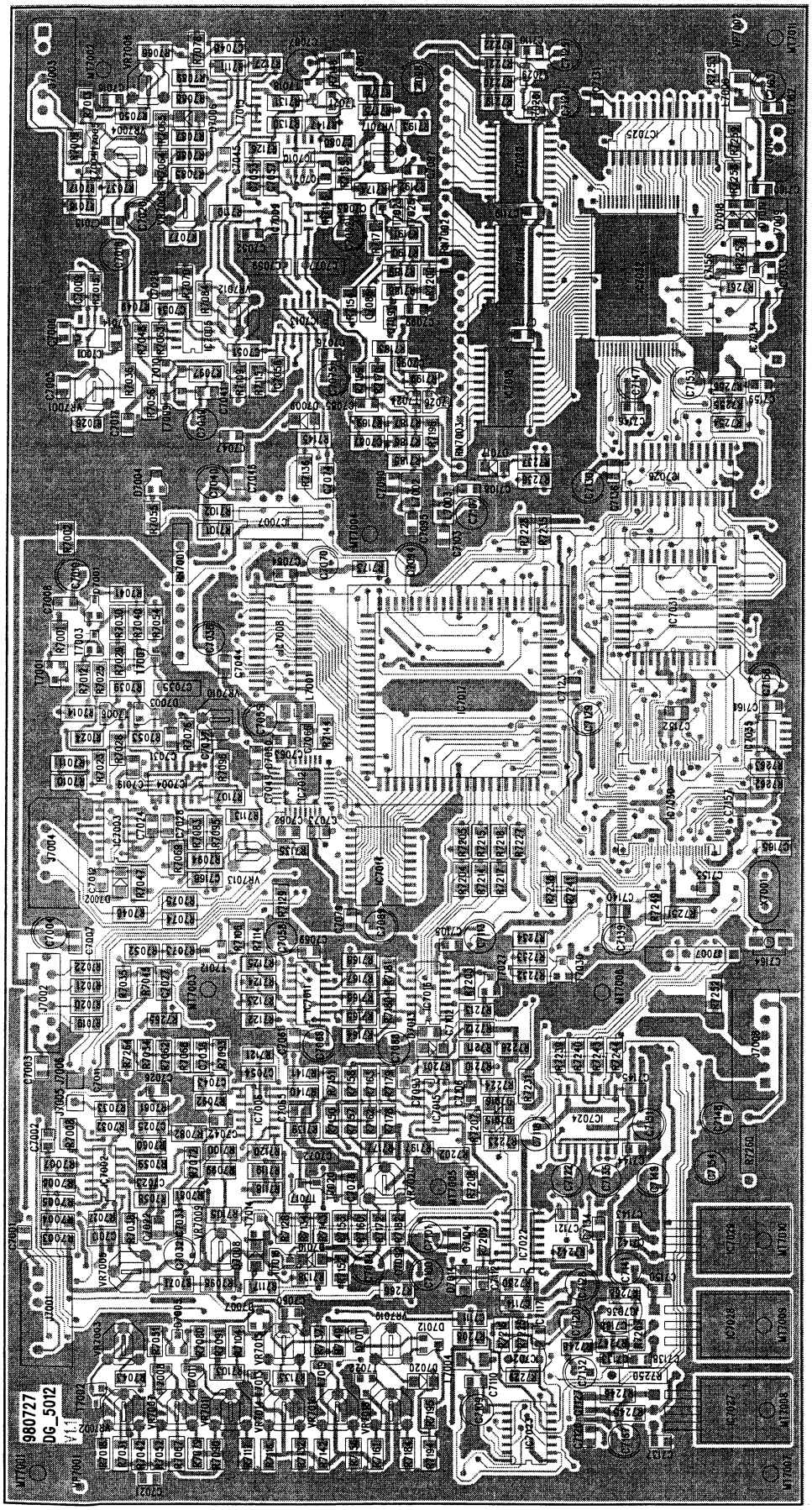
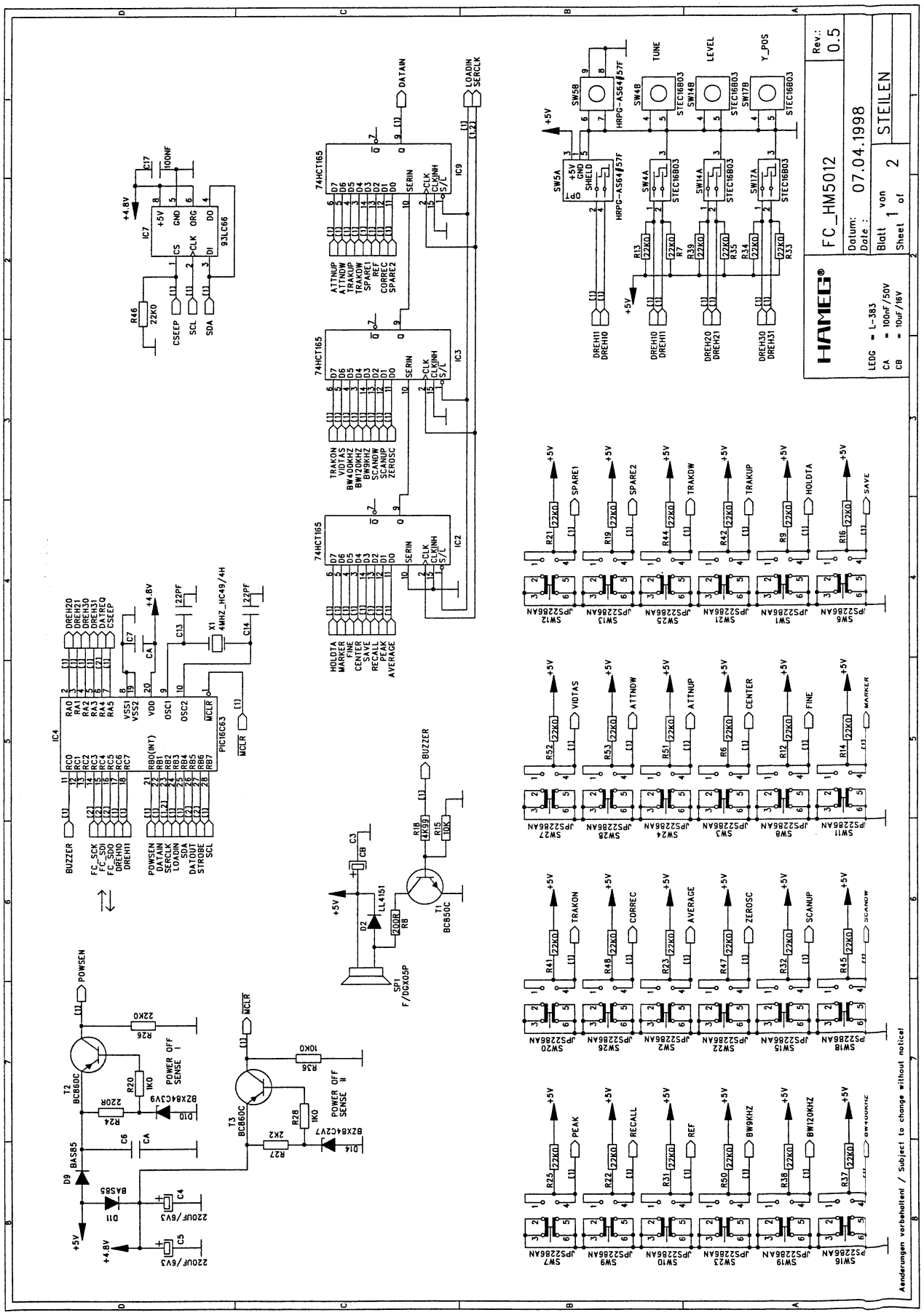
DG_5012 9807xx
Rev.: V1.1
Datum: 27.07.1998
Date :
Blatt 6 von 6
Sheet of
Grebenstein
CA = 100nF/50V
CB = 10uF/16V
Aenderungen vorbehalten! / Subject to change without notice!
IC7030
IC7031
IC7026
IC7007
IC7017A
IC7017B
IC7035
IC7033
J7002
J7009
J7007
R5232
FC_HW5012
HDC
D7004
LG-S260
C7165 22PF
X7001 18.40MHZ
C7164 6-30PF
MAX809
R7251 10KO
R7205 1KO
C7084 1UF/50V
R7173 100K
R7055 221R
R7257 100K
R7228 10KO
R7227 10KO
R7102 10KO
R7101 10KO
R7262 10KO
R7263 10KO
R7022 1KO
R7021 1KO
R7020 1KO
R7018 1KO
R7226 1KO
R7239 100K
R7254 100K
R7255 100K
R7249 100K
AT24LC64
AT17C65
27C2048FN
FPGA_RDY
CCLK
D/P
D_IN
DATA_REQ
TR_LEVEL
TXD
RXD
SCL
SDA
DDS_IN
DAC_DOUT
DAC_CLK
CS_MARK_DAC
CS_MARK_FF
SEL_VIN
CS_B_DAC
C_MARK_SEL
CPUTIM
FC_SCLK
FC_SDO
FC_SDI
SEL_SP2
SEL_SP1
SYSCLK
CS_EPROM
CS_RAM
CS_NDOUT
CS_DDS
CS_DAC8
CS_FPGA
SDB_DIV
CS_FPGA
VIDFIL
BWSEL0
BWSEL1
SCANWA
SCANWB
SCANWC
SCANWD
ZERO_ON
RUN
CS_RAM
CS_BUF
RAM_RD
RAM_WR
RSEL0
RSEL1
RSEL2
CS_B_DAC
DAC_CLK
DAC_DOUT
CS_DDS
DDS_IN
D_IN
CCLK
D/P
RESET
RUN
SYS_CLKOUT
WDO
WD1
WD2
NMI
IRQ0
IRQ1
IRQ2
IRQ3
IRQ4
IRQ5
IRQ6
IRQ7
IRQOUT
A(00:21)
D(00:15)
CS_EPROM
RD
CS_RAM
WR
RD
CS_FPGA
WR
RD

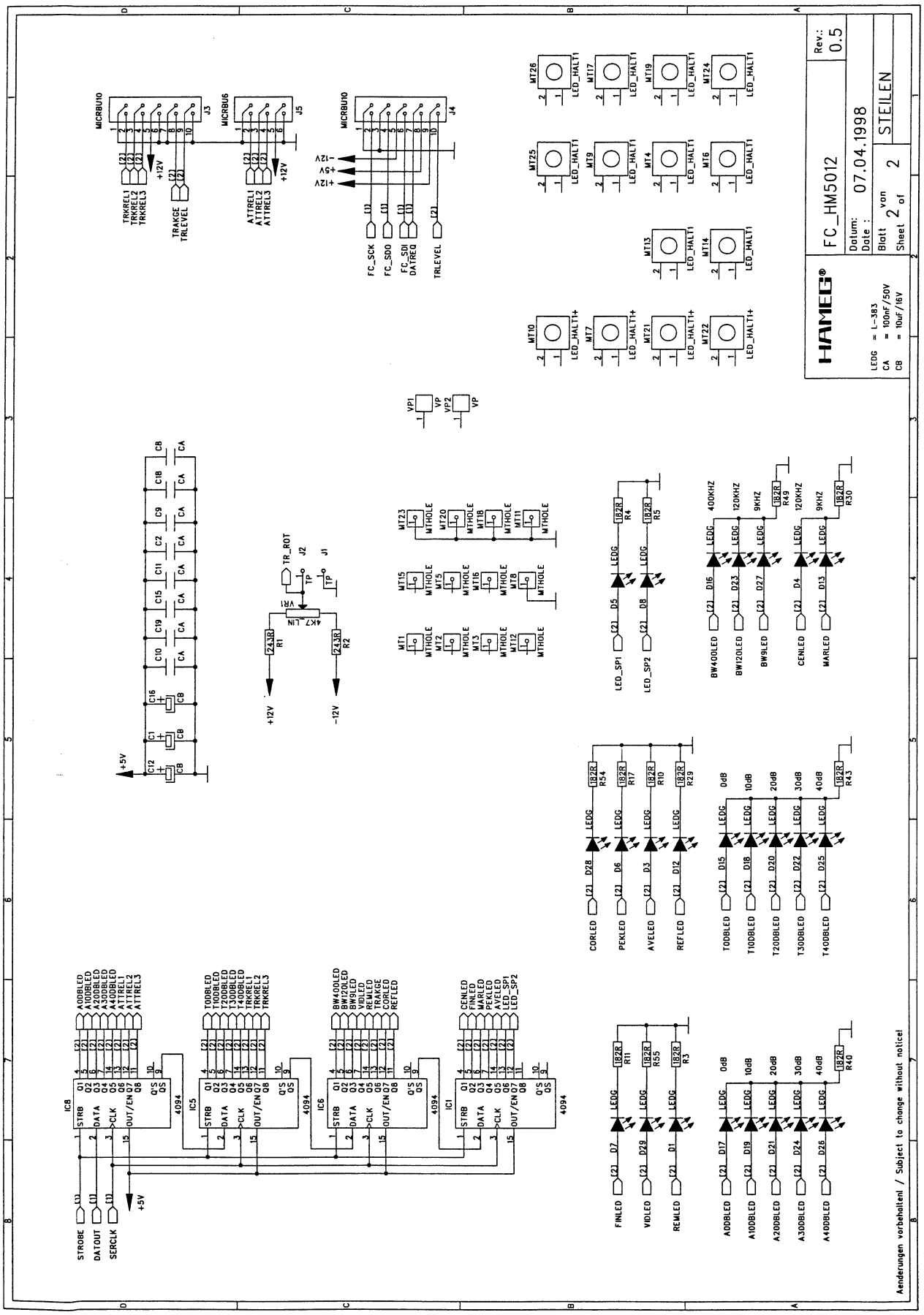


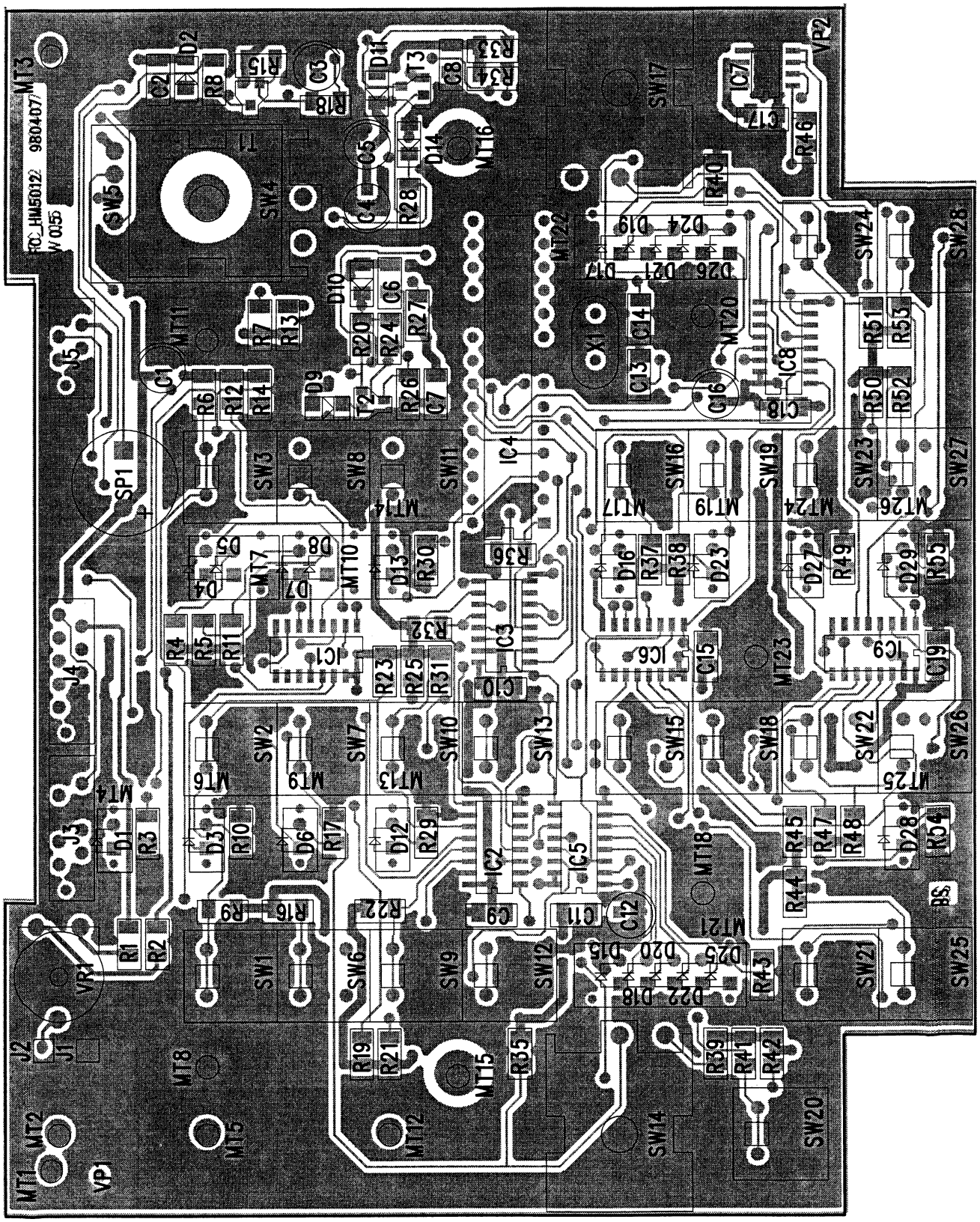
Digital Board - Bottom side



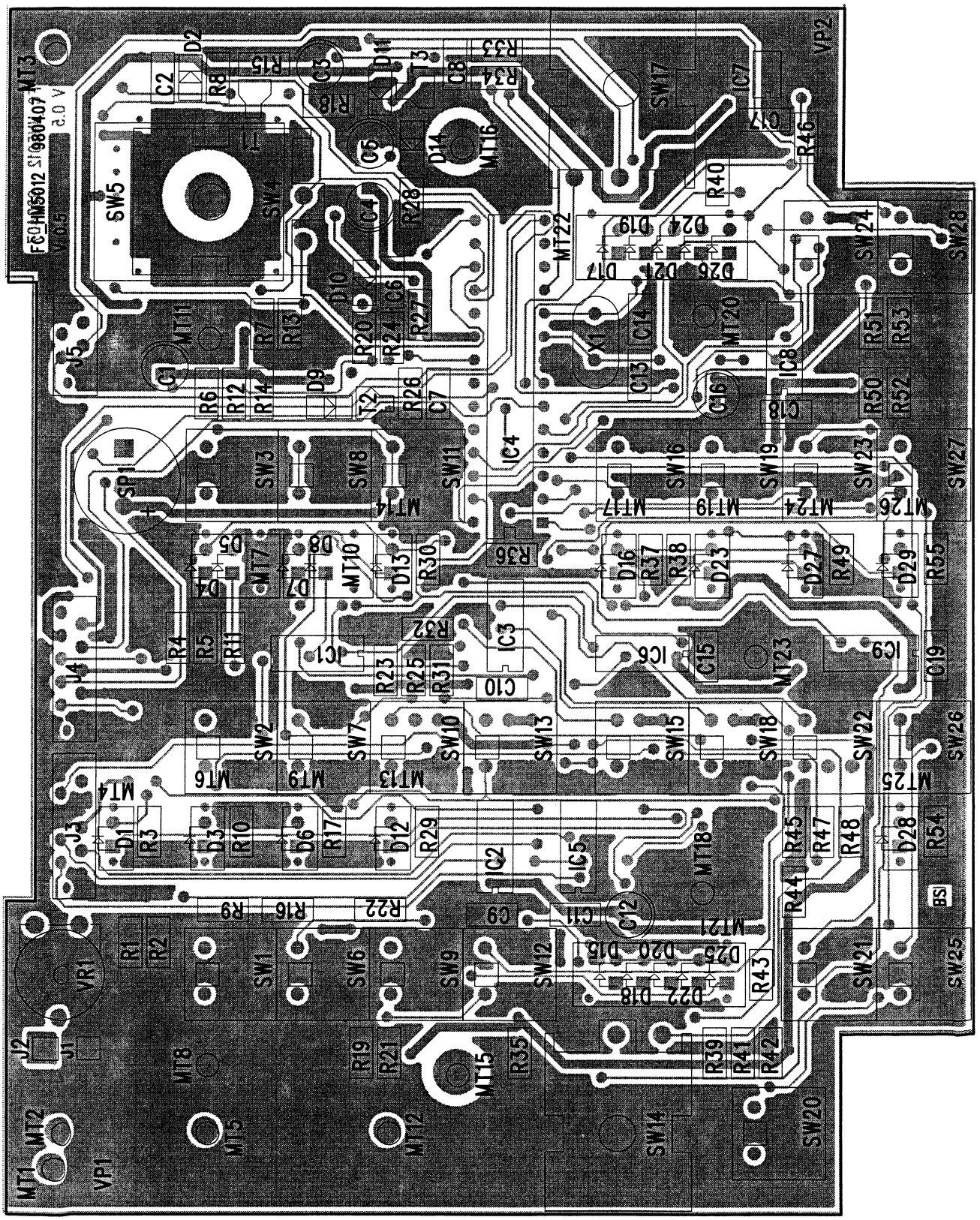
Subject to change without notice

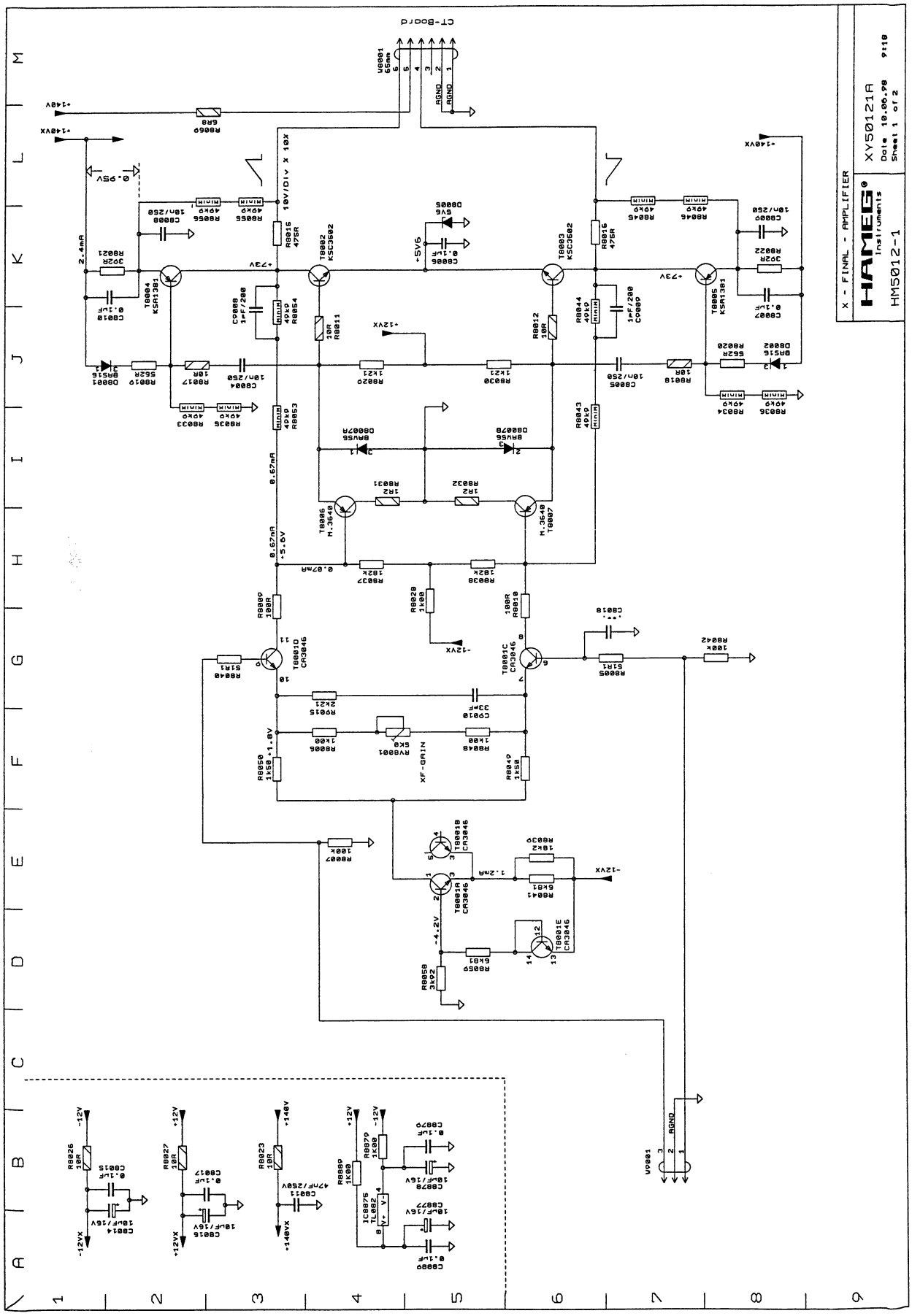

HAMEG
FC_HM5012
Datum: 07.04.1998
Date :
Blatt 1 von 2
Sheet 1 of 2
STEILEN
Rev.: 0.5
LEDG = L-383
CA = 100nF/50V
CB = 10uF/16V
Aenderungen vorbehalten! / Subject to change without notice!


FC_HM5012
Datum: 07.04.1998
Date :
Blatt 2 von 2
Sheet 2 of 2
STEILEN
Rev.: 0.5
HAMEG
LEDG = L-383
CA = 100nF/50V
CB = 10uF/16V
Aenderungen vorbehalten! / Subject to change without notice!
STROBE
DATOUT
SERCLK
FC_SCK
FC_SDO
FC_SDI DATREQ
TRLEVEL
TRKREL1 TRKREL2 TRKREL3
TRAKGE TRLEVEL
ATTREL1 ATTREL2 ATTREL3
+12V
+5V
-12V
TR_ROT
A0DBLED
A10DBLED
A20DBLED
A30DBLED
A40DBLED
ATTREL1
ATTREL2
ATTREL3
T0DBLED
T10DBLED
T20DBLED
T30DBLED
T40DBLED
TRKREL1
TRKREL2
TRKREL3
BW400LED
BW120LED
BW9LED
REMLED
VDLED
TRAKGE
CORLED
REFLED
CENLED
FINLED
MARLED
PEKLED
AVELED
LED_SP1
LED_SP2
CORLED
PEKLED
AVELED
REFLED
FINLED
VDLED
REMLED
BW400LED
BW120LED
BW9LED
CENLED
MARLED
LED_SP1
LED_SP2
T0DBLED
T10DBLED
T20DBLED
T30DBLED
T40DBLED
A0DBLED
A10DBLED
A20DBLED
A30DBLED
A40DBLED

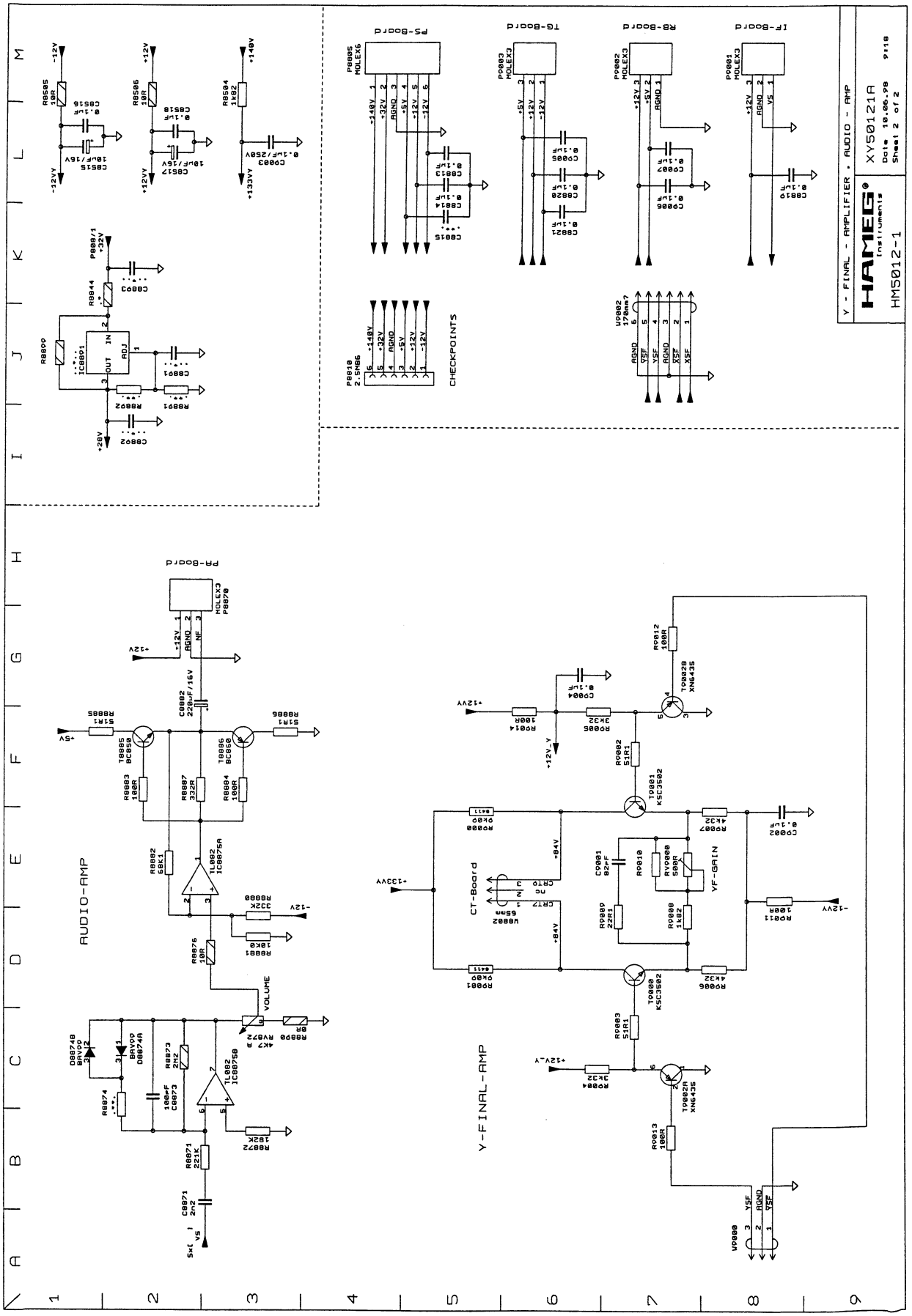

FC_HW56012 9804077
W 0155
MT3
C2
D2
R8
C15
C3
R18
T1
SW5
SW4
T3
C8
R33
R34
D11
C5
D14
MT16
SW17
IC7
C17
VR2
R46
R40
C4
R28
MT22
D24
D19
D26
D21
D17
SW24
SW28
D10
C6
R27
R20
R24
MT11
R7
R13
J5
C1
X1
C14
MT20
R51
R53
R6
R12
R14
D9
T2
R26
C7
C13
C16
IC8
C18
R50
R52
SP1
SW3
SW8
SW11
IC4
SW16
SW19
SW23
SW27
MT14
MT17
MT19
MT24
MT26
D5
D4
D8
D7
MT7
MT10
D13
R30
R36
D16
R37
R38
D23
D27
R49
D29
R55
R4
R5
R11
C2
IC3
IC1
R23
R25
R31
C10
IC6
C15
IC9
C19
MT23
J4
SW2
SW7
SW10
SW13
SW15
SW18
SW22
SW26
MT6
MT9
MT13
MT25
MT4
J3
D1
R3
D3
R10
D6
R17
D12
R29
IC2
IC5
D28
R54
R45
R47
R48
MT18
R9
R16
R22
C9
C11
C12
R44
MT21
BS
R1
R2
VR1
SW1
SW6
SW9
SW12
D20
D15
D25
D22
D18
R43
SW21
SW25
J2
J1
R19
R21
R35
R39
R41
R42
MT8
MT15
MT5
MT12
SW14
SW20
MT1
MT2
VP1

FC Board - Bottom side

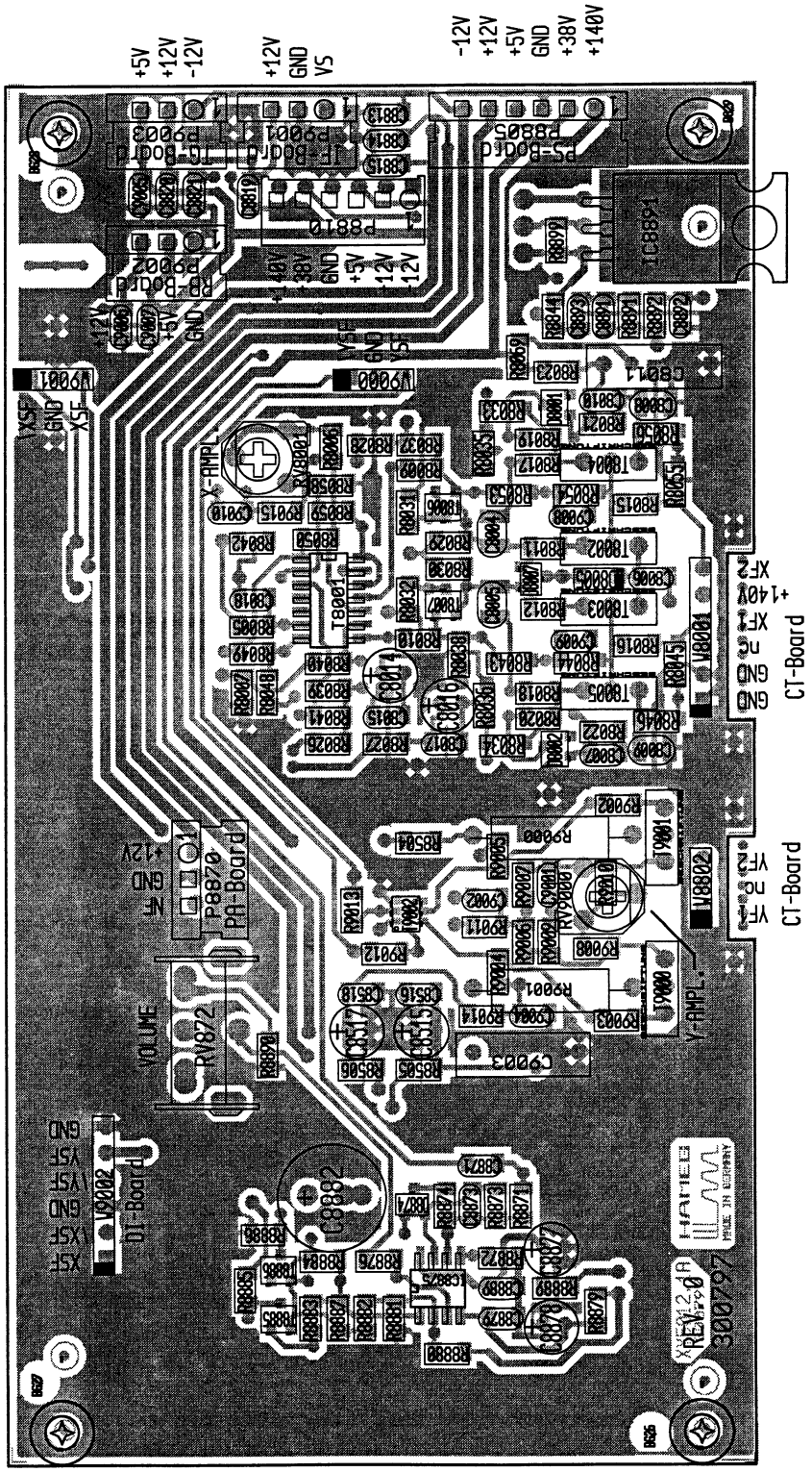



CT-Board
x - FINAL - AMPLIFIER
HAMEG Instruments
XY50121A
Date 10.06.98
Sheet 1 of 2
HM5012-1
10V/Div X 10X
XF-GAIN
AGND
+14VX
-14VX
+12VX
-12VX
+7.3V
-7.3V
+5V6
+5.6V
-4.2V
1.2mA
0.67mA
0.87mA
2.4mA

XY Board - Diagram



Subject to change without notice


+5V
+12V
-12V
+12V
GND
VS
-12V
+12V
+5V
GND
+38V
+140V
CT-Board
CT-Board
PA-Board
VOLUME
Y-AMPL.
X-AMPL.
XSF
YSF
GND
+12V
+140V
+38V
+5V
-12V
P8870
RV872
RV8802
RV9000
RV9001
TC8891
U8882
T8004
T8005
T8002
T8003
T8001
T9000
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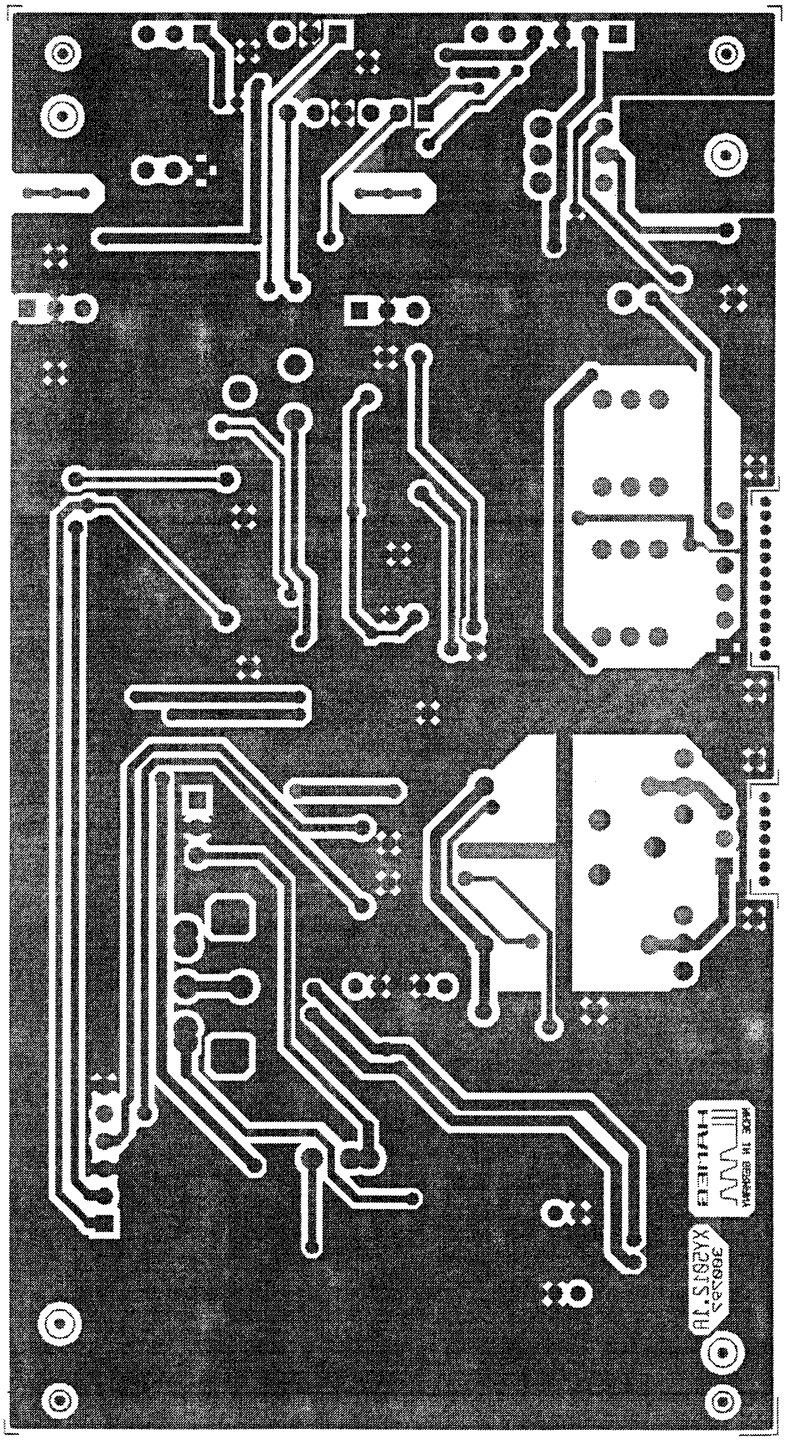
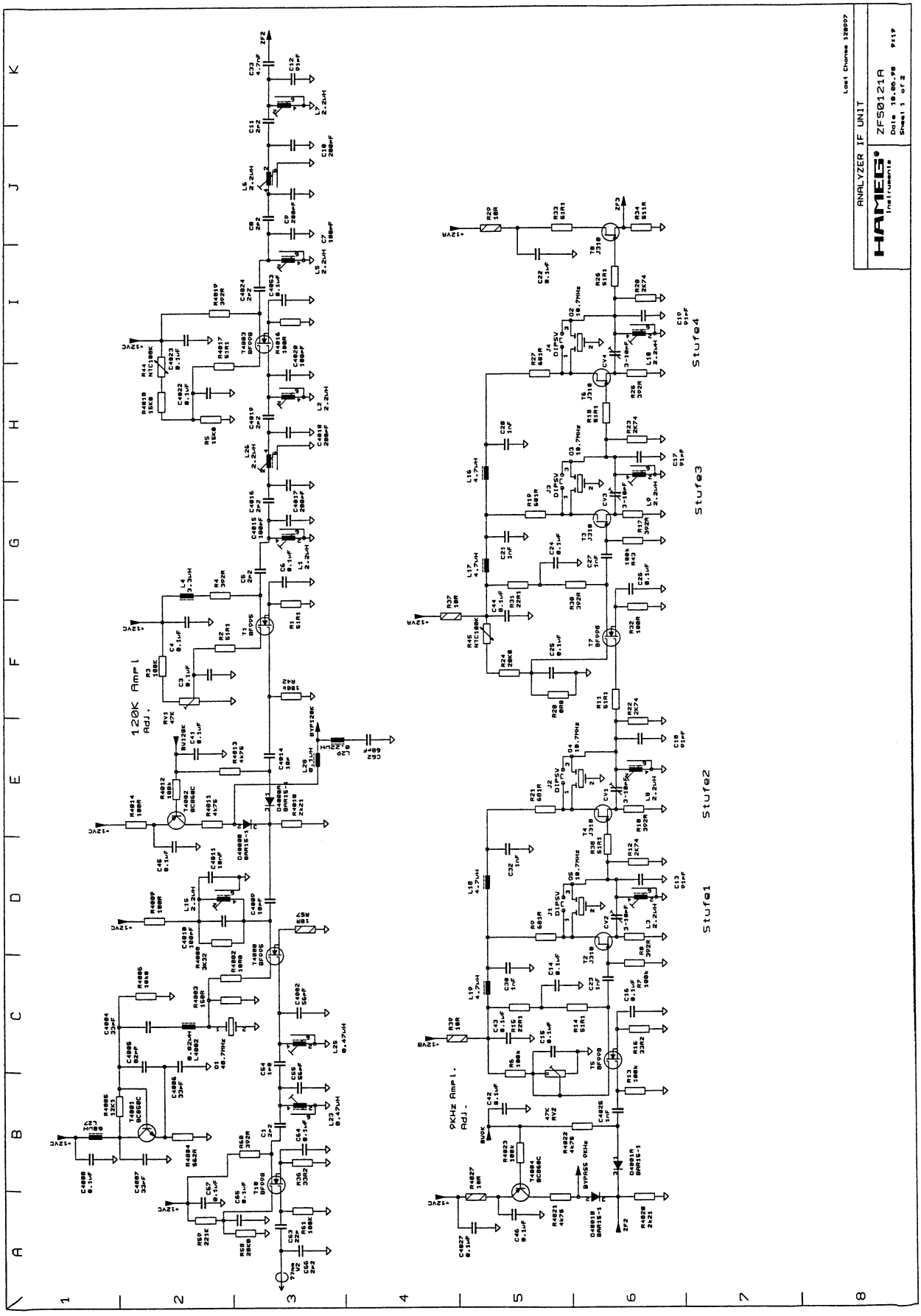
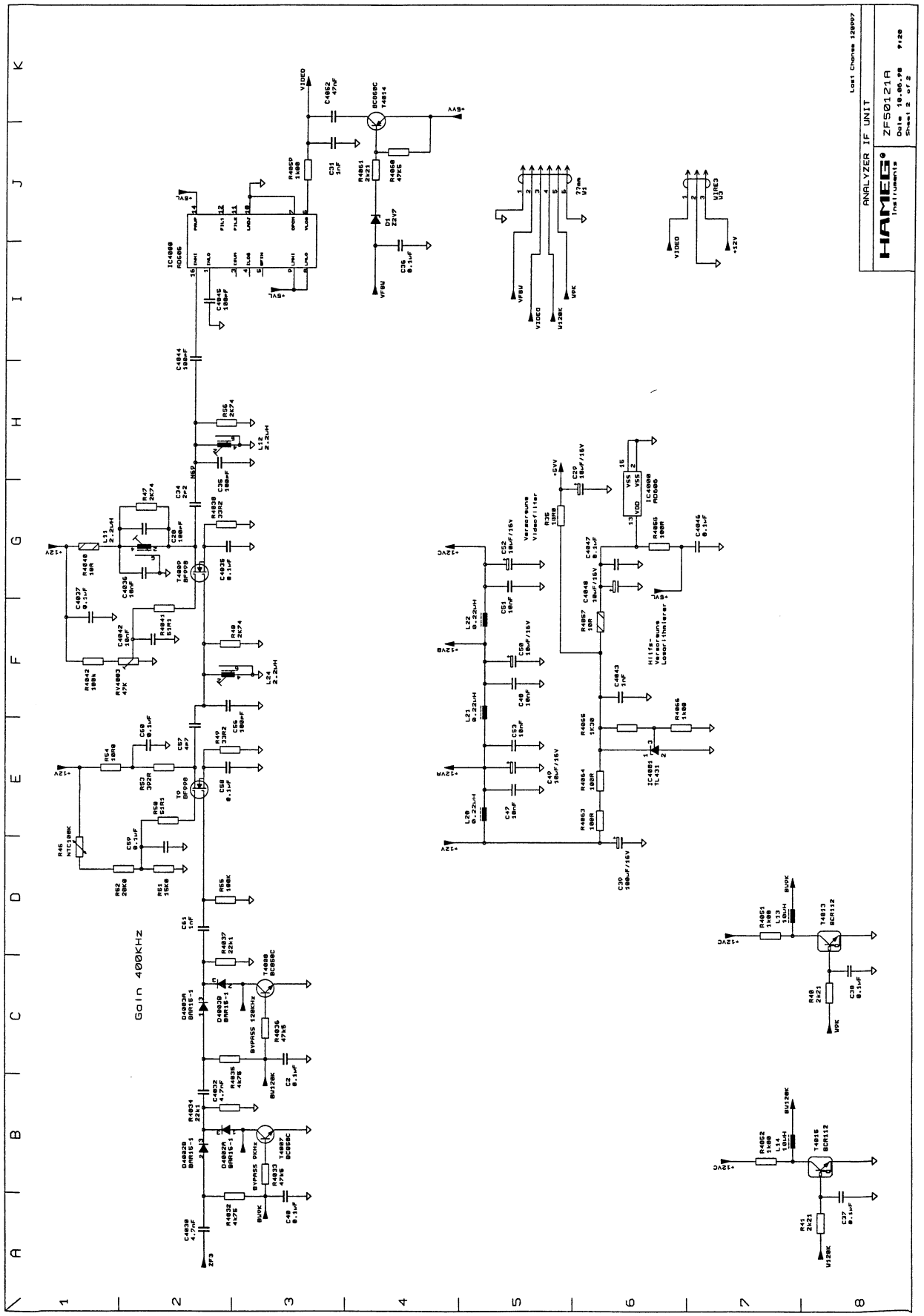
T9039

XY Board - Bottom side

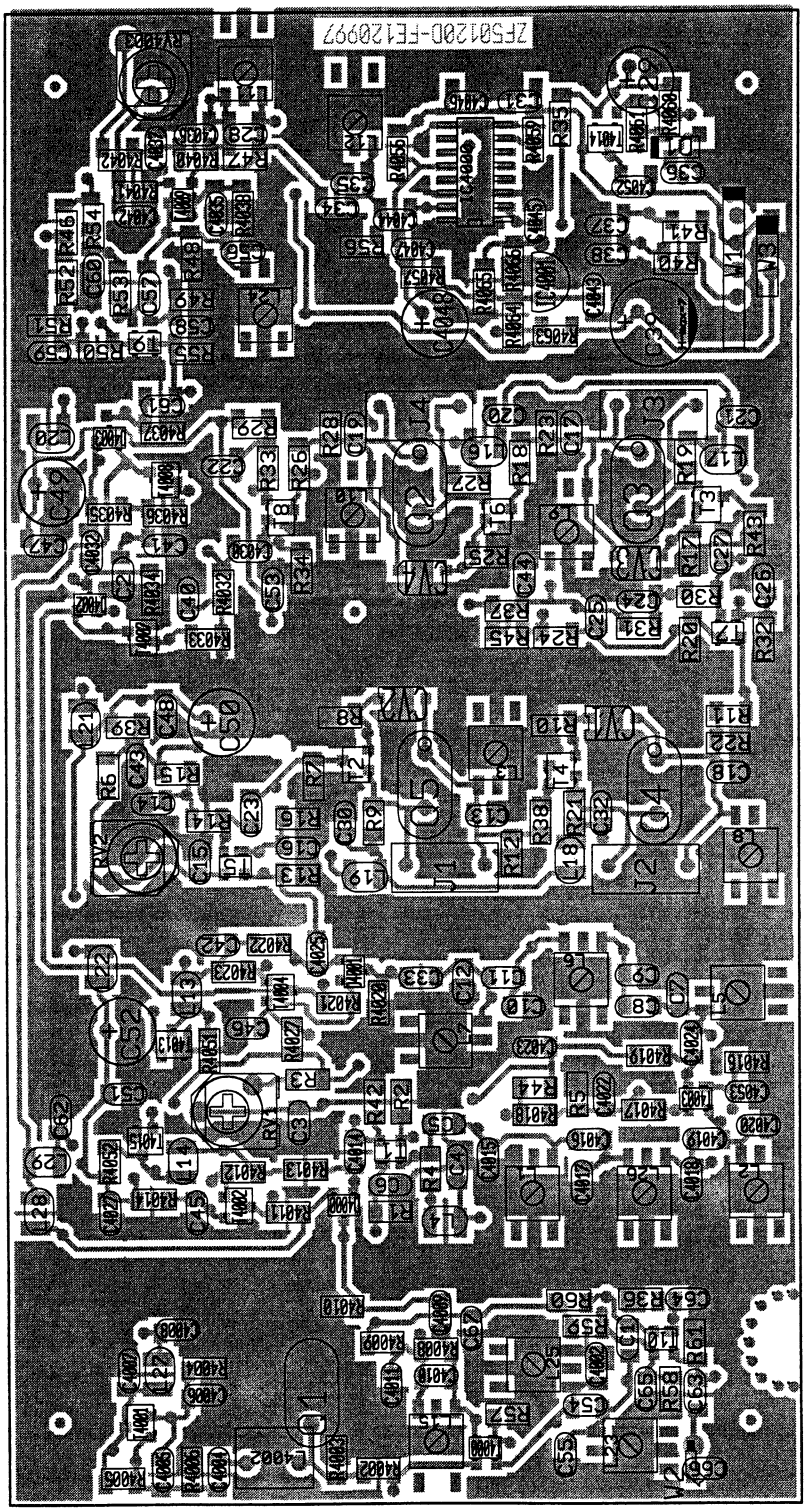



ANALYZER IF UNIT
HAMEG
ZFS0121A
Stufe1
Stufe2
Stufe3
Stufe4
120K Ampl
Adj.
9KHz Ampl.
Adj.

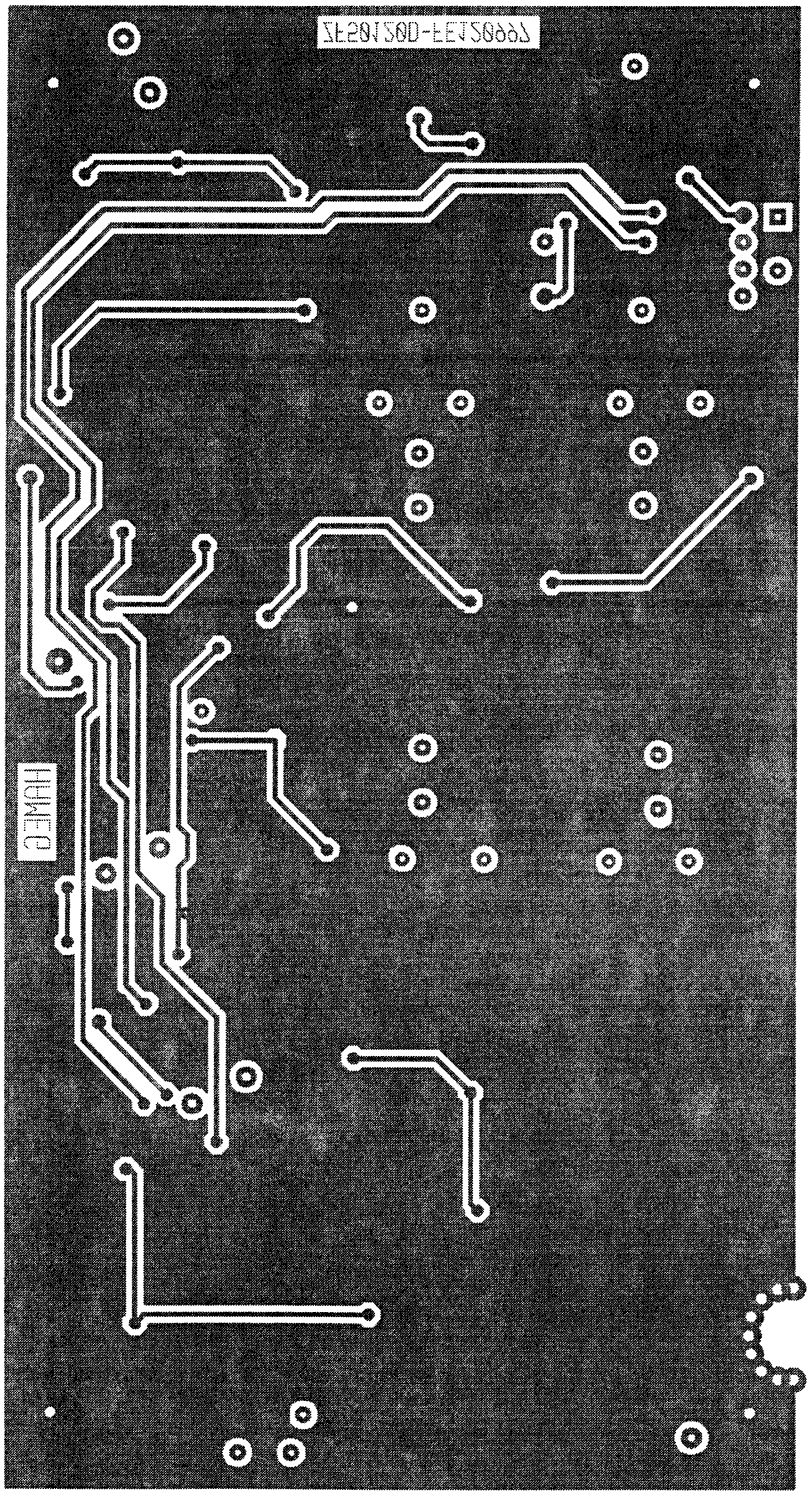
ZF Board - Diagram

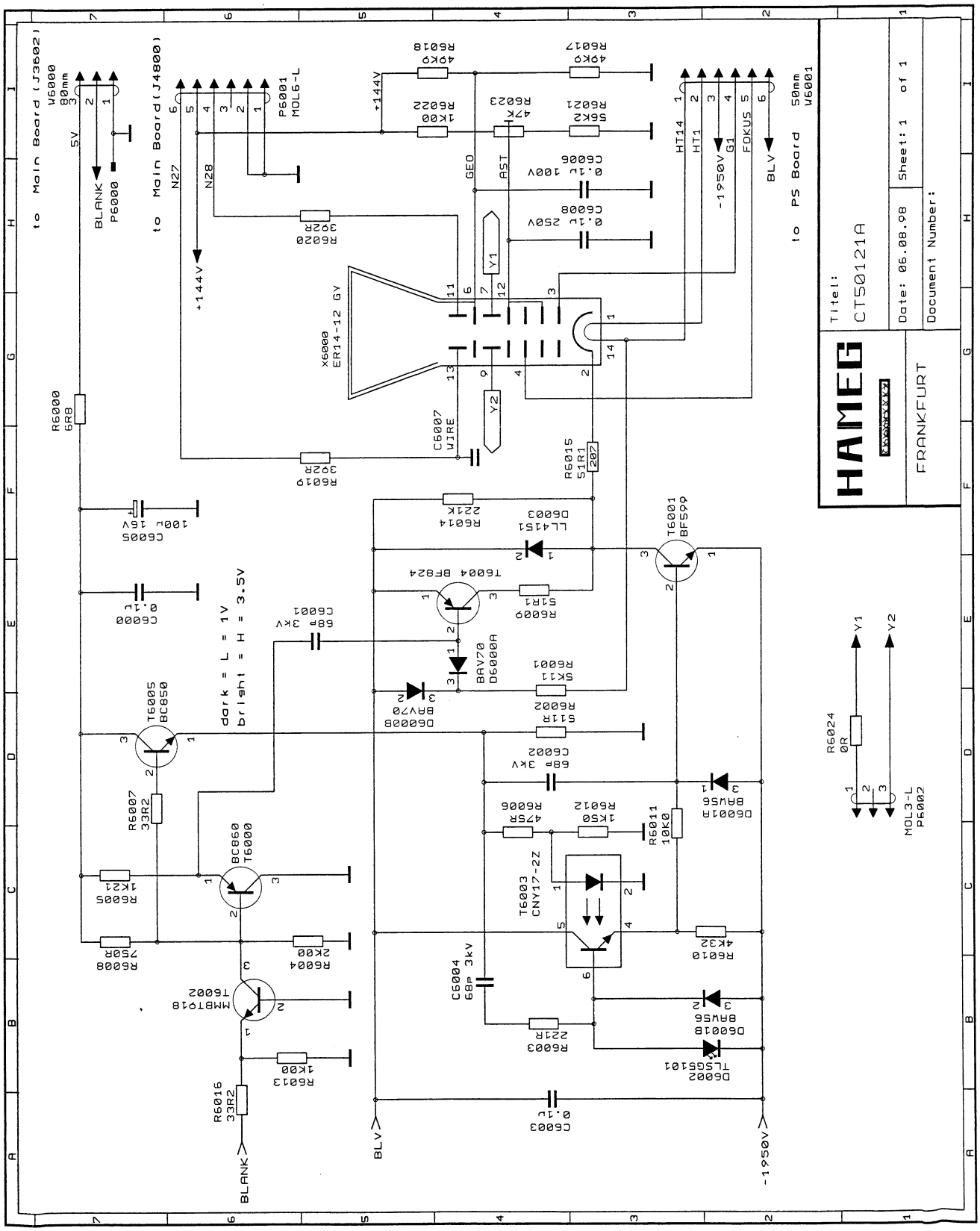


Subject to change without notice

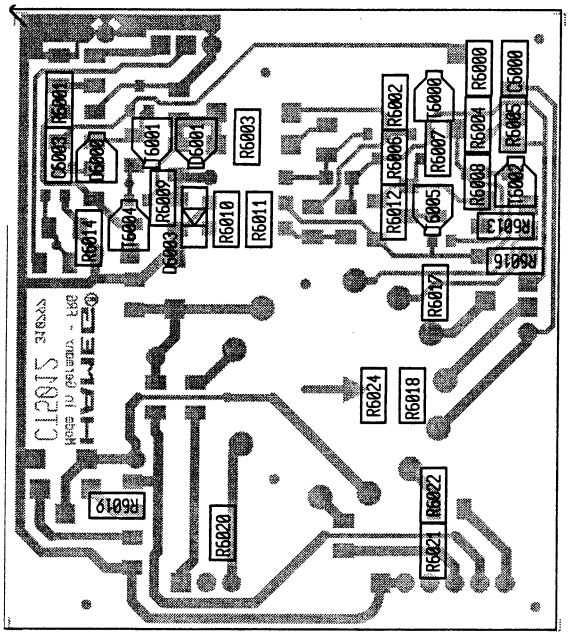


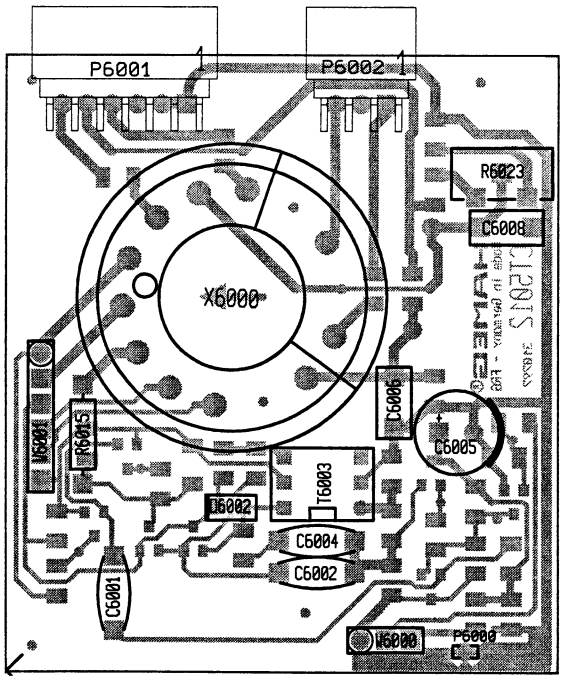
ZF Board - Bottom side

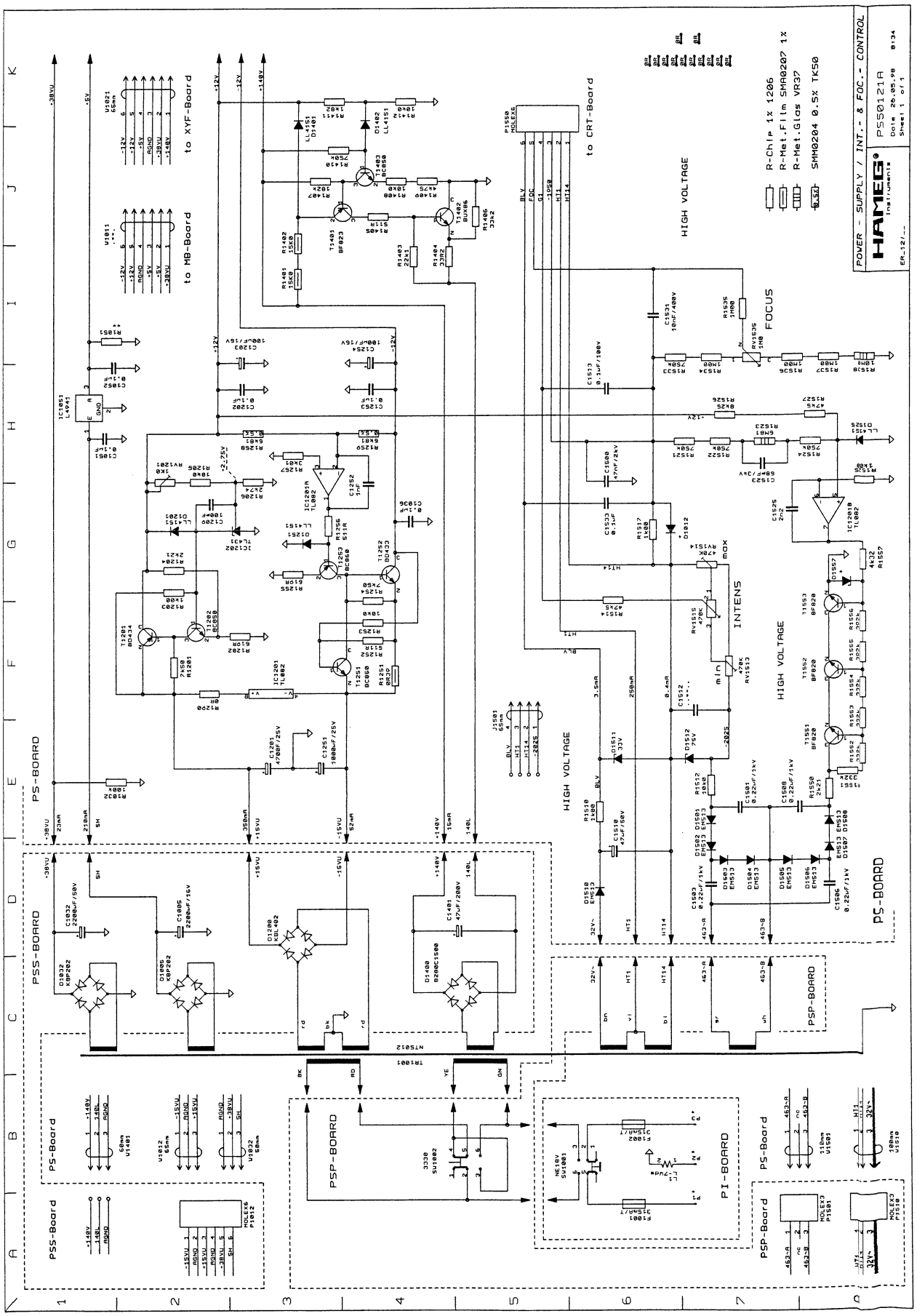



to Main Board (J3602)
to Main Board (J4800)
to PS Board
HAMEG
FRANKFURT
Titel:
CT50121A
Date: 06.08.98
Sheet: 1 of 1
Document Number:
dark = L = 1V
bright = H = 3.5V
BLANK
BLV
-1950V
+144V
GEO
AST
FOKUS
HT14
HT1
G1
Y1
Y2
MOL3-L
P6002

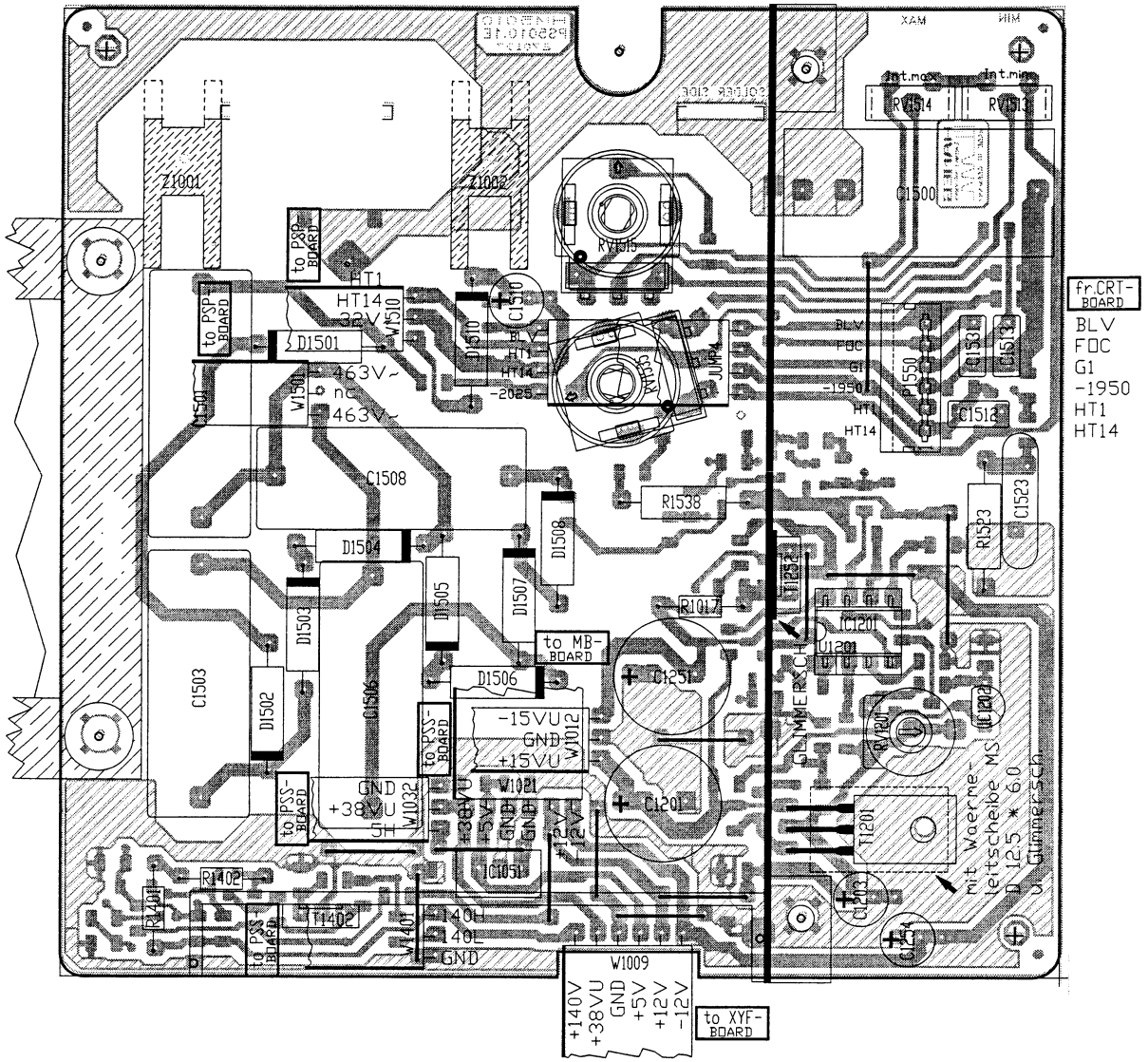
CRT Board - Top and bottom side

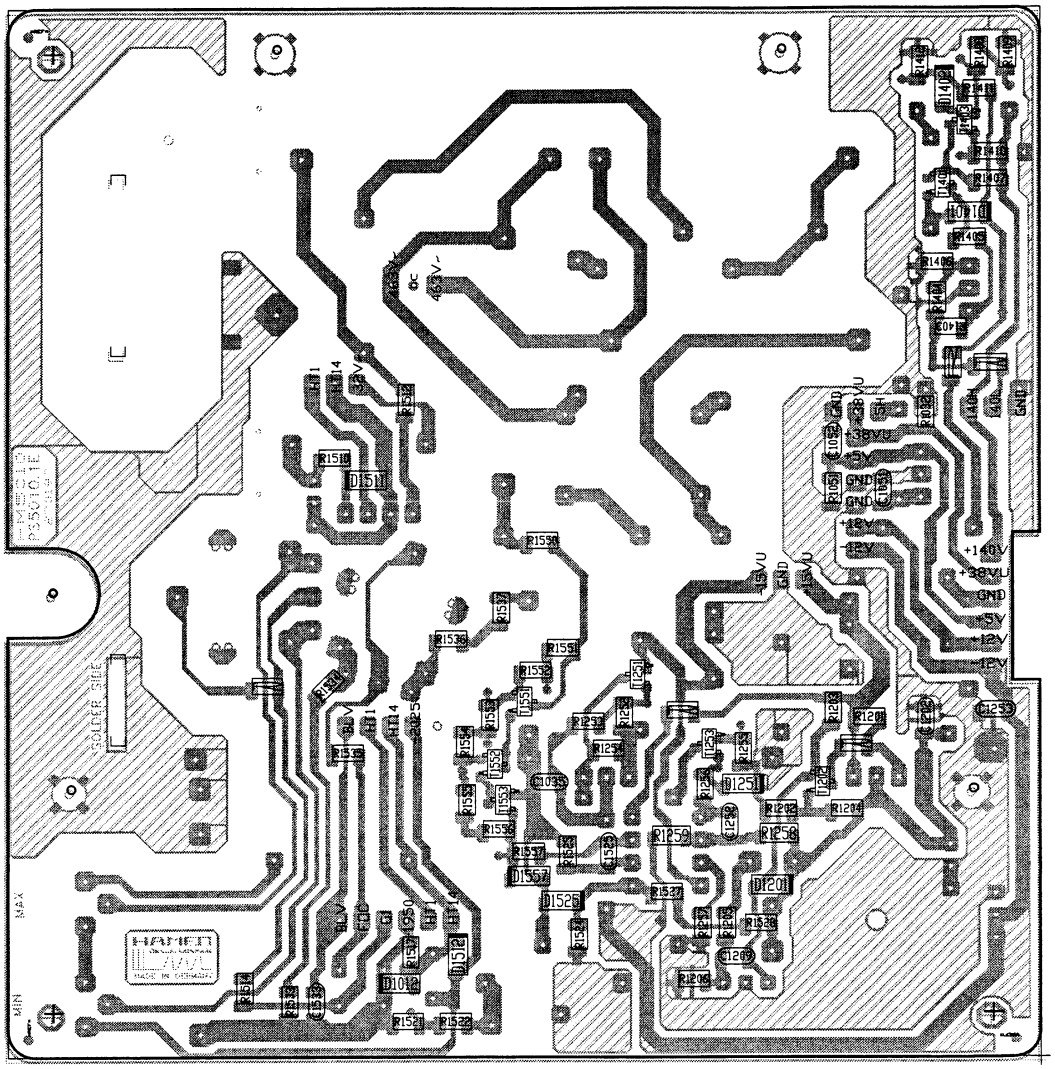




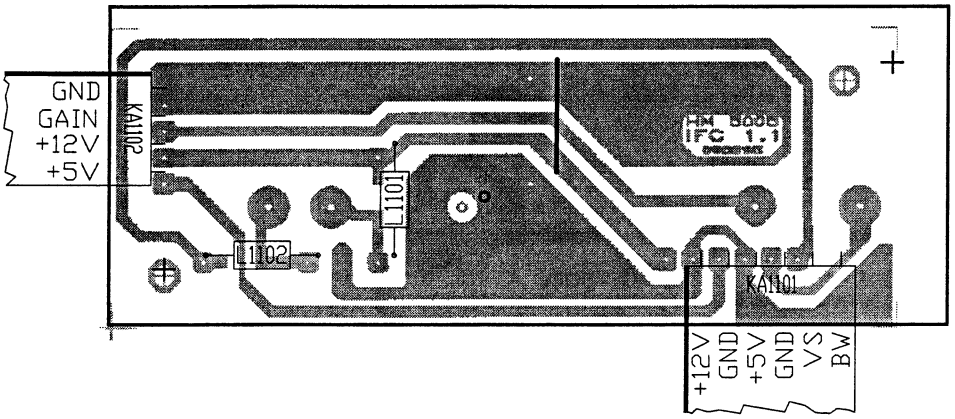

POWER - SUPPLY / INT.- & FOC.- CONTROL
HAMEG
PS50121A
Date 26.05.98
Sheet 1 of 1
to XYF-Board
to MB-Board
to CRT-Board
HIGH VOLTAGE
FOCUS
INTENS
PS-BOARD
PSS-BOARD
PSP-BOARD
PI-BOARD
R-Chip 1% 1206
R-Met.Film SMA0207 1%
R-Met.Glas VR37
SMM0204 0.5% TK50

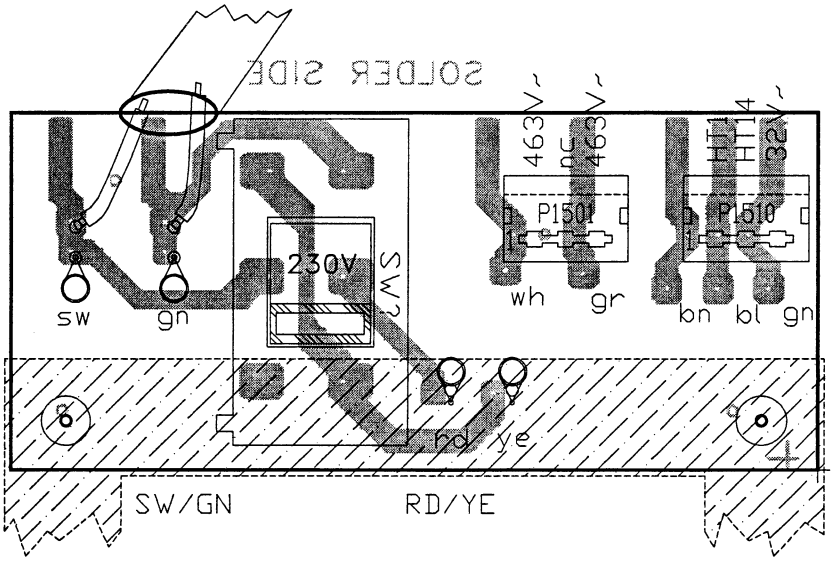
PS Board - Top side

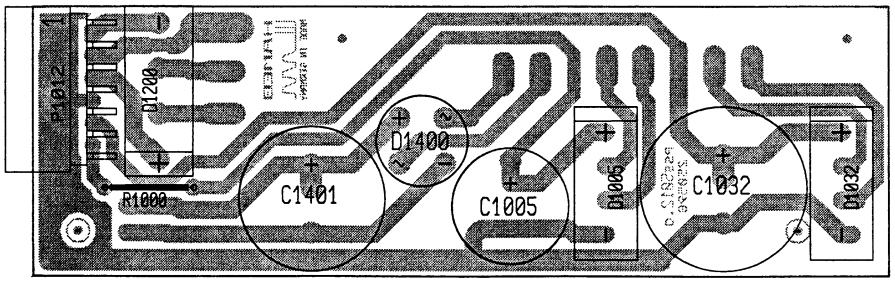


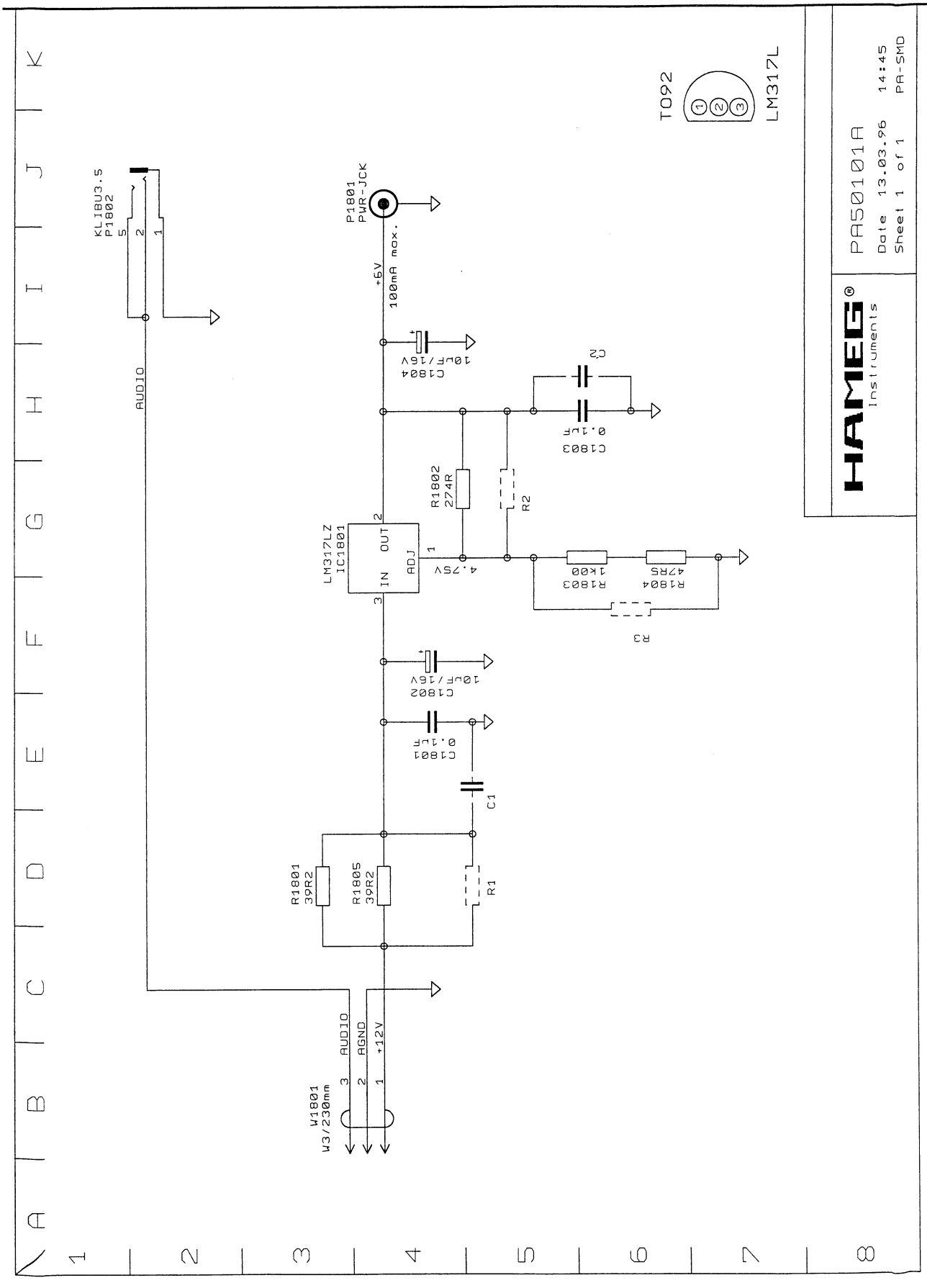


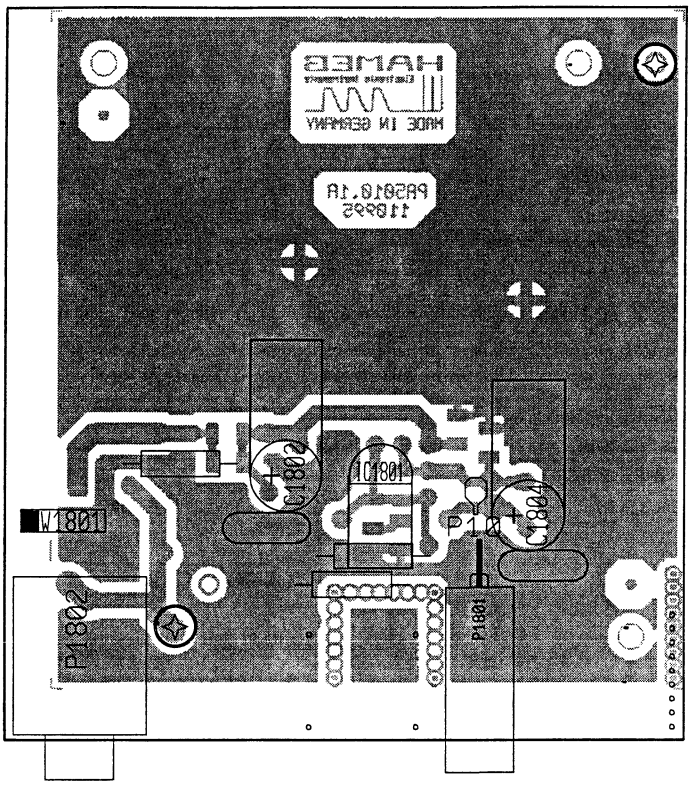
PSP and PSS Board - Top side

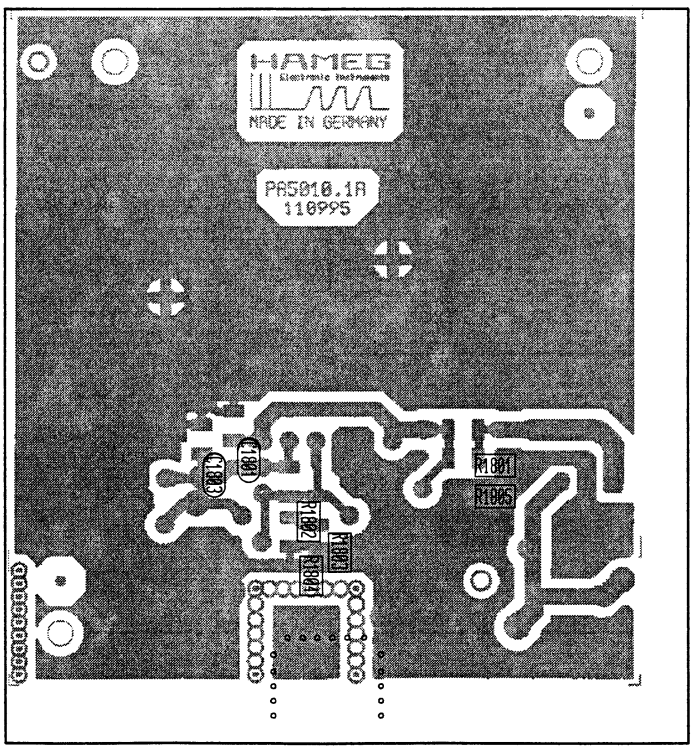







HAMEG
Instruments
PA50101A
Date 13.03.96 14:45
Sheet 1 of 1 PA-SMD
LM317L
TO92
KL18U3.5
P1802
AUDIO
P1801
PWR-JCK
+6V
100mA max.
C1804
10µF/16V
C2
C1803
0.1µF
R1802
274R
R2
LM317LZ
IC1801
IN
OUT
ADJ
4,75V
R1803
1K00
R1804
47R5
R3
C1802
10µF/16V
C1801
0.1µF
C1
R1801
39R2
R1805
39R2
R1
W1801
W3/230mm
AUDIO
AGND
+12V


W1801
P1802
P1801
C1802
IC1801
C1804


HAMEG
Electronic Instruments
MADE IN GERMANY
PA5010.1A
110995
C1803
C1801
R1801
R1805
R1802
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R1804